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A Review
OF
MODERN GYNÆCOLOGICAL PRACTICE.

A Paper read at a Meeting of the Plymouth Medical Society

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ASSISTANT GYNÆCOLOGICAL AND OBSTETRIC SURGEON TO THE MIDDLESEX HOSPITAL AND SURGEON IN CHARGE OF ITS MILITARY HOSPITAL AT CLACTON-ON-SEA; VISITING SURGEON TO THE COUNTY OF LONDON WAR HOSPITAL; SURGEON TO THE CHELSEA HOSPITAL FOR WOMEN, ETC.

MR. PRESIDENT AND GENTLEMEN,—Casting about for a subject likely to interest men in general practice, I came to the conclusion that I could not do better than to epitomise the principal advances that have occurred in gynæcology during recent years, and endeavour to present a bird's-eye view of modern gynæcological practice.

FIBROIDS OF THE UTERUS.

Taking first, then, the subject of fibroids of the uterus, we note that the surgical treatment of these tumours appears to have reached its high water-mark. When I first became interested in gynæcological matters 17 years ago, the general professional opinion was wavering between that of the older school of gynæcologists, who absolutely interdicted operative treatment except under the most urgent necessity, and a comparatively small band of pioneers who advocated early removal of these tumours. The younger school has won. The steady improvement in technique has rendered the removal of these tumours one of the most satisfactory operations of surgery, both as regards its immediate and its late results. The risk, indeed, when the patient is brought to the surgeon early should not exceed that attending the removal of the appendix during a quiescent period. Of course, when the patient does not come up for operation until the onset of some degenerative process or some accidental complication has produced urgent symptoms, the mortality is considerably higher; but this is not to be charged to the operation but to the unfortunate delay which has allowed the best time for the removal of the tumour to slip away. Even, however, in the worst examples the results are remarkably good, and taking all cases the operative mortality in expert hands is nowadays well below 2 per cent.

The practice of abdominal section for fibroid tumours of the womb has resulted in the opening up of another chapter of what Moynihan so aptly called the "pathology of the living," for by its means we have learned that pelvic masses diagnosed as myomata are sometimes not fibroids at all but spring from the ovary or the tube or some other adjacent structure, while in other cases the mass is compound, being partly myomatous and partly ovarian or tubal as the case may be.

Results of Delay in Operation.

The want of appreciation of the limitations of what I may term "consulting-room diagnosis" has often had unfortunate results. A patient was brought to me some years ago whom both her medical attendant and myself strongly advised to undergo abdominal section for a tumour which appeared to be a fibroid. She therefore consulted an eminent gynæcologist of the older school, who advised her that if she did not mind her waist being a couple of inches larger than ordinary women, there was no reason for an operation. In consequence, I saw no more of her until nine months later, when she suddenly developed great abdominal pain and ascitic distension. I operated and found a large adenomyoma of the uterus, but the main mass consisted of an ovarian growth of malignant character which at one place had perforated the capsule of ovarian tissue surrounding it. I removed the parts as freely as I could and for some time I heard no more of the patient. Later on, however, she was brought to me suffering from an abdominal recurrence which was irremovable. I have no doubt that had she had the operation performed when I first saw her she would have been permanently cured.

Given that one is correct in diagnosing a fibroid, the degree to which it endangers the patient may be under-estimated. Some years ago I advised a lady to have one of these tumours removed because, although she had neither pain nor hæmorrhage, the mass was steadily increasing in size. She agreed, but pleaded to be allowed to take part in a boating trip up the river of some days' duration before going into the home. This I allowed her to do. An hour before the operation she became very faint and ill, and when I opened the abdomen I found it full of blood. A large varicosity on the surface of the fibroid had burst, just as a varicose vein of the leg might do. I had to expedite the operation as much as possible, for she had lost an enormous quantity of blood. But fancy if this accident had befallen her whilst on her up-river trip!

Here is another case teaching the same lesson. I advised a lady who had a fibroid of medium size to have it removed. She decided not to have the operation performed, as the tumour was not seriously affecting her general health. I saw no more of her for over a year. At the end of that time I was requested to operate on her as soon as possible, as the tumour had recently enlarged and become painful. On examining her before operating I at once perceived that the mass presented very different features from those noticed when I last saw her, and malignancy was suggested. So it turned out: the fibroid was complicated by malignant ovarian disease, and the mass was immovable and irremovable.

Death due to a fibroid tumour unoperated upon is not often recorded, because even the most conservative practitioner or the most fearful patient seeks the aid of the surgeon in the last resort. But it does occur. I learnt some while back of the sudden death of a lady after a profuse uterine hæmorrhage whom I had advised several years ago to allow me to remove her tumour. Only a month previously she told me over the telephone that she was trying to screw up her courage to the necessary pitch.

Extent of the Operation.

The removal of a fibroid is, as a rule, a perfectly straightforward operation, presenting no difficulties to those accustomed to this class of surgery. Occasionally, however, the operation may be exceedingly difficult, taxing the powers of the most expert and experienced. Nobody should undertake the surgery of these tumours who is not competent to deal with the formidable cases, for it is impossible to estimate beforehand the degree of difficulty which one is going to meet. As regards the extent of the operation, the ideal is removal of the tumour alone (myomectomy), but it is often impossible to

achieve it without considerably increasing the risk to the patient. Conservation of the uterus in a young woman allows of pregnancy and in a woman below the menopause of menstruation. It has, however, been estimated that pregnancy after myomectomy only occurs in 10 per cent. of the cases.

When pregnancy occurs in a myomatous uterus conservation of the organ is in the highest degree desirable because its functional value is then proven in the completest manner. It is occasionally necessary to operate on these cases before the child has reached viability, and in such myomectomy should always be performed in preference to hysterectomy unless this involves a great increase in the risks to the patient. Of course, in a certain proportion of the cases abortion will follow, but in the rest the pregnancy continues to term.

The following case, however, shows that the ideal proceeding is to let the child attain to viability, perform Cæsarean section, and then enucleate the tumour or tumours.

A patient was sent to me with a diagnosis of fibroids and pregnancy in order that hysterectomy might be performed as the tumours were growing rapidly. I managed, however, to tide her over until just before full-term. I then opened the abdomen and, having delivered the child by Cæsarean section, proceeded to enucleate seven large fibroids (the largest the size of a melon) from out the uterine wall. In doing this I opened the cavity in two fresh places. I closed all the incisions in the uterine wall and obliterated the cavities left by the enucleations, and returned the uterus into the abdomen.

This woman made a perfect recovery, and a year afterwards again became pregnant. Fearing lest the strain of labour might prove too much for the scarred uterine wall I delivered her for the second time by Cæsarean section with an entirely successful result. The interesting point was that when I came to examine the uterus before incising it I found not a trace of my previous operation, and I have no doubt that she could have delivered herself. I am particularly proud of this case which I venture to think marks a further step in the conservative surgery of the uterus.[1] The generally accepted treatment up to lately would have been to remove the uterus after delivering the child.

As regards the continuance of menstruation, this is desirable in certain cases, for there can be no doubt that the absence of the monthly discharge may occasion plethoric feelings quite apart from the flushings of the true menopause. On the other hand, there is a risk in leaving the uterus that the menorrhagia which necessitated the operation may continue after it, while in patients very anæmic the continuance of the periods, even in normal amount, is undesirable. Hysterectomy, therefore, is far more commonly performed than myomectomy, but the latter operation is rightly selected in certain cases.

The majority of gynæcologists favour the subtotal operation where removal of the uterus is called for. It is easier, just as efficient in curing the disease, and leaves the vaginal vault intact. I am strongly of opinion that the removal of the cervix when healthy is unnecessary and undesirable.

As regards the treatment of the ovaries, nearly all experts are agreed that when they are healthy one at least should be left. Personally, I think that both should always be left under such circumstances. The value of the ovaries in the feminine economy has been subject to much change of opinion. Ruthlessly removed in the past for all sorts of conditions, at the present time ultra-conservatism is the order of the day, and rightly so, I think. Latterly, however, there has been in some quarters a revival of the opinion that their ablation makes little difference to the woman. I shall return to this subject presently.

Treatment by Irradiation.

I have said that the operative treatment of fibroids appears to have reached its high-water mark. In certain quarters there has lately been a trend in the opposite direction. The treatment of these tumours by irradiation has been favourably reported on by certain continental radiologists who claim that in a large proportion of the cases exposure to massive doses of X rays brings about, not only cessation of the hæmorrhage, but atrophy of the neoplasm. It is known that exposure to X rays produces atrophy of the genital glands (the ovary and testis), and it is therefore *a priori* likely that irradiation carried to sufficient extent should have an effect on fibroids similar to that produced by double oöphorectomy. This operation as a treatment for fibroids has been abandoned for a good many years because, although it resulted in cessation of hæmorrhage in many cases, or even atrophy of the tumour, yet in others the bleeding continued or recurred, and the growth failed to lessen in size, while in practically all cases the patient still remained liable to those accidents and complications which attend the possession in the uterus of a fibroid, even when small. The operation, in short, achieved the same uncertain result as is produced by the natural climacteric.

What has at present to be determined is whether the effects of irradiation are solely due to the production of atrophy of the ovaries—a bloodless method of oöphorectomy in short—or whether the rays have a specific effect on the cells of the tumour itself. The advocates of irradiation claim that such specific effects are produced, at all events, in some cases. Studying the reports, however, one is struck by the length of time over which the treatment needs to be continued, and that the authors themselves admit that a proportion of the tumours are refractory to the rays, facts that harmonise exactly with the known results of oöphorectomy and the natural menopause. At present also sufficient time has not elapsed to test the permanence of the improvement. Until it is shown that irradiation produces a specific effect on the tumour, leading to its complete disappearance, the treatment is to be regarded as equivalent to double oöphorectomy, with the advantage that no cutting is required; but sharing with it, at the best, the disadvantages that it deprives the patient of ovarian secretion, and leaves the tumour, though perhaps shrunken, *in situ*, while at the worst it may altogether fail. At present, all one can say is that the evidence in favour of the treatment is unconvincing, and that a great deal of undoubted exaggeration has been employed by its advocates.

The fact also that the published results are mostly of German origin makes one very cautious of accepting them.

CANCER OF THE UTERUS.

The surgical treatment of cancer of the uterus has greatly advanced during the last ten years. I will briefly remind you that up to the

[1] Victor Bonney: Journal of Obstetrics and Gynæcology of the British Empire, December, 1913.

time of the introduction of the modern radical abdominal operation carcinoma of the cervix was treated by vaginal hysterectomy. The scope of this operation was small, the operability rate—i.e., the percentage of operable cases out of 100 presenting themselves—being only 10, or at the most 15 per cent. Further, the ultimate results, even with much selection, were very poor, for the growth recurred in about 9 out of every 10 cases that recovered from the operation. The modern operation is an extensive procedure whereby through an abdominal incision is removed not only the diseased uterus, but the upper half of the vagina, the adjacent parametric and paravaginal tissue, and the regional glands as well. The operation when thoroughly carried out is the most difficult in surgery, not excepting the modern abdomino-perineal method of excising the rectum. It is accompanied by a considerable risk which varies directly with the advancement of the growth, but its ultimate results show an enormous advance on those of vaginal hysterectomy. In correctly appraising these results it is absolutely necessary to take into consideration the operability rate, for it is obvious that the larger the number of patients operated on out of every 100 seen, the greater will be the number of advanced cases dealt with.

Wertheim, the Austrian gynæcologist, who has performed a far larger number of operations than any one else, has an operability rate of 50 per cent., while his cure rate, estimated on the number of patients recovering from the operation and remaining free of the disease for five years, is about 53 per cent.. or more correctly reckoned on the total number of patients seen (actual achievement rate) works out at between 18 and 19 per cent. Compare this result with the figures of vaginal hysterectomy, and we see that whereas by the older operation, out of 100 patients presenting themselves, one or at the most two are rescued from the disease, by the modern method nearly 20 are saved.

Results in this Country.

In this country the operation has only been largely performed during the last five years, so that a sufficient time has not elapsed to judge of its results on a five years' freedom from recurrence basis. But there is every prospect that the British results will be quite as good as those just quoted. My colleague, Comyns Berkeley, and I have performed a large number of these operations, and at the International Congress of Medicine held in 1913 we published our results reckoned on a three years' basis.[2] From 1907, when we began to do the operation, to July, 1910, we saw 112 cases—out of these we operated on 71 (operability rate 66 per cent.). Of these 71 patients 16 died as the result of the operation (operative mortality rate 22 per cent.). Of the 55 patients that survived 20 had died from recurrence, 2 from intercurrent disease, 3 were still alive but had recurrent growth, 2 had been lost sight of (both were alive three years after the operation), and 28 remained alive and free from recurrence, at periods varying from three to nearly six years since the date of their operation. Our actual achievement, therefore, reckoned on a three years' freedom from recurrence basis was 25 per cent.

Three years' freedom from metastatic growth cannot be reckoned as a cure, for about 9 per cent. of recurrences are known to take place during the fourth and fifth years.[3] It will be noticed that our operability rate is considerably greater than that of Wertheim's, and, indeed, we have only refused operation or desisted from it when the growth has been absolutely too extensive for removal.

Limitations of the Operation.

What are the limitations of the operation? First and foremost, extensive infiltration of the base of the bladder. Mere adhesion can be dealt with, and even in moderate infiltration a portion of the bladder can be excised though it makes the prognosis much more grave; but where the bladder base is extensively involved it is useless to attempt the removal. Involvement of one ureter can be dealt with by resection of a portion of the conduit and implantation into the bladder, but where both are carcinomatous the operation should be desisted from. Infiltration in the paracervical tissue, unless very extensive, does not prevent removal, and in this connexion it may be remarked that a thickened condition of the base of the broad ligaments is often inflammatory. Glandular involvement, so long as the aortic and lumbar glands are free, is no bar. In the very thorough operation that we perform the pelvic, obturator, and iliac glands are removed as a routine whether enlarged or not. It has been objected to this practice that in cases as advanced as this it is useless to operate. Our experience does not support this view. In no less than 5 of our 28 cases free from recurrence after periods varying from three to six years, the removed glands were carcinomatous on microscopical examination. To have been able to save, or at all events to prolong, the life of patients with such advanced disease is, I think, a subject for legitimate pride.

The application of this extensive operation to cancer of the body of the uterus has been advised by some, but I do not hold with the practice. The results attained by simple total hysterectomy, with wide excision of the upper part of the broad ligaments, sufficiently fulfil the requirements of pathology as regards the extirpation of the lymphatic tracts affected in corporeal disease.

Treatment by Radium.

With the radical abdominal extirpation of carcinoma of the cervix the surgeon has reached his limit, and the last card in the operative treatment of malignant disease appears to have been played. The hope that in the future more searching and safer means of cure than the scalpel and the dissecting forceps may be discovered is growing brighter. Encouraging local effects following the application of radium and mesothorium to areas of malignant disease have already been reported, and especially in the case of carcinoma of the cervix. This variety of malignant disease would indeed appear to be specially suitable for treatment by irradiation, because carcinoma in this situation is so often a purely local growth. In over 50 per cent. of the patients dying of the disease no metastatic growth in any situation is discoverable.

Following the application of radium marked local changes occur in the growth. The carcinoma cells break up and are absorbed, while a dense fibrosis occurs in the irradiated area and the bleeding and discharge entirely stop in a certain proportion of the cases. There is

[2] Ibid., November, 1913.

[3] Ibid., November, 1913. This year we had intended to publish the results of the operation as regards these patients on a five years' freedom from recurrence basis, but the calls made upon us in consequence of the war have rendered a postponement necessary.

at present, however, no evidence that the rays extend their action to cancer cells lying remote from the position of the radium, as, for instance, in the paracervical tissue and the regional glands. In regard to these last it may be said that the condition of the cervix bears no constant relation to the involvement of the glands. The latter may be affected very early in some cases, whilst in others they are free of growth right to the end.

From a very considerable experience of the use of radium in these cases my conclusions at the present time are as follows. That though in many cases radium produces a remarkable improvement or even apparent disappearance of the growth this improvement or disappearance is very rarely of long duration. In most of the patients the growth breaks out again. I have seen no case in which on a three years' freedom from recurrence basis a cure could be claimed. Further, in a certain proportion of the cases the growth appears to be refractory and no improvement is manifested, while there is a third group in which the sufferings of the patient are markedly increased on account of the dense fibrosis produced being accompanied by great pain. Lastly, it must be admitted that the use of radium is followed in a certain number of the cases by the formation of fistulæ into the bladder or rectum. In some of these the radium is directly responsible for the giving way of the vesical or rectal walls; in others it probably merely accelerates the formation of a fistula which would be inevitable sooner or later. Though the high hopes founded on radium treatment have only partially been realised, yet we have to remember that these are early days, and that our knowledge of the effects produced by irradiation is as yet very imperfect, still more so our knowledge of how to control these effects. The future will see, I believe, great advances in this direction, but the time when the surgeon shall be supplanted by the radiologist is not yet.

The Value of the Ovary.

Turning now to the ovary, I would remind you of the vast amount of research work that has been devoted to that organ—work that has resulted in a better appreciation of its importance in the feminine economy. The wholesale performance of oöphorectomy that distinguished gynæcological practice at one time has given place to strict conservatism, for it is recognised that even a portion of an ovary is better than no ovary at all.

The ovary has been shown to be an organ producing an internal secretion on which the feminine attributes largely depend. Its relation to other internal secreting glands is at present the subject of investigation. It is well known that double oöphorectomy in one patient may be followed by violent menopausal symptoms, whilst in another it may have little effect in that direction. Indeed, there are certain amongst modern gynæcologists, though I do not agree with them, who hold that its importance in preventing such symptoms has been exaggerated. It is suggested that the other internal secreting glands of the body, the adrenals, the thyroid, and the pituitary body may act in a supplementary or complementary capacity to the ovary in varying degree in different individuals. Hence might be explained the different value of the ovary in different women.

Animal experiments have shown that though the ovary has great influence on the uterus the latter organ has none on the ovary, and that its removal leaves them unaffected. Observations on women who, having undergone hysterectomy with conservation of the ovaries, have subsequently to have their abdomen reopened for some other condition show that the conserved organs remain healthy and active, and confirm the experimental results. Perhaps the best proof is the fact that women with congenital absence of the uterus often have perfectly normal functional ovaries.

Ovarian Grafts.

A great deal of experience is accumulating on the subject of ovarian grafts. Of this it may briefly be said that autografts (the patient's own ovary) are successful wheresoever they are planted, but heterografts (the ovary of another individual) appear to wither and absorb.

The most usual method of grafting is to drop the removed ovary, after having sliced it into several pieces, between the peritoneum and the posterior sheath of the rectus just before closing the wound. An ovary in this situation will maintain the menstrual function and save the patient from the drawbacks of a premature menopause.

Ovarian Cysts.

Of late years our knowledge of the nature of ovarian cysts has expanded, and we know now that in a considerable proportion of the cases a portion at least of the tumour is malignant. Hence the present-day practice of removing cysts whole instead of first tapping them.

Salpingitis.

Advance has been made in the treatment of diseases of the Fallopian tubes. There is an increasing tendency to apply early operative measures. The reasons are several. In the first place, the limitations of ordinary examinational methods in making a diagnosis are better recognised. Symptoms pointing to inflammation of the tube may, for instance, be due to tubal gestation or appendicitis, and *vice versâ*. An inflamed appendix in particular, when lying in the pelvis, may simulate salpingitis very closely. The old laborious clinical distinctions between para- and peri-metritis, formulated at a time when the clinician had no opportunity of testing the correctness of his conclusions by an abdominal section, have been shown to be erroneous. It is often impossible, short of opening the abdomen, to determine the relations of a mass lying in juxtaposition to the uterus. Further, it is recognised that an attack of salpingitis, though apparently recovered from without operation, may be followed years after by illness due to secondary changes supervening in or about the adherent thickened tube. Still more important is the fact that early operative interference enables the surgeon to be more conservative in his measures, for it is then possible, as a rule, to excise the tube alone, or even to drain it; whereas when the condition is dealt with weeks after the onset of the attack the whole appendage may be disorganised and have to be removed. The surgery of chronic salpingitis also is more conservative than it used to be. You no longer see the appendages hauled up and cut off as unceremoniously as a pear is plucked from a tree. Instead, salpingectomy, with conservation of the ovary or part of the ovary (often with grafting into some new situation) is practised. In a certain proportion of tubes sealed up by chronic inflammation it is the correct thing to perform salpingostomy by opening up to the closed end and everting the mucous membrane to form a new abdominal ostium. I have performed

the operation many times, but must confess I do not know of any of my patients who have subsequently become pregnant, though this happy result has been recorded by others.

The continental practice of ablating the uterus as well as the appendages in cases of severe salpingitis has never found great favour in this country, though in certain cases it is undoubtedly the proper course. I am sure, however, that in cases of salpingitis steps should be taken after removal of the tubes to prevent the uterus retroverting into the pelvis and becoming adherent there, as it is very apt to do. I always either ventrifix or shorten the round ligaments in these cases.

DISPLACEMENTS OF THE GENITAL CANAL.

A steady decline in the favour in which pessaries were formerly held has marked the last ten years. The multitude of fantastically-shaped pieces of rubber, vulcanite, celluloid, or pewter which distinguished the catalogues of surgical instrument makers no longer obtrude themselves. A self-retaining pessary is a foul device comparable with a tooth plate which could only be taken out of the mouth every two or three months. Its use has been largely superseded by operative measures, the technique of which has been immensely improved upon. Much more discrimination is used in the treatment of displacements of the genital canal than was formerly the case, and not every woman who happens to have a slight retroversion or descent of the vaginal vault is visited by the insertion of a foreign body in her vagina. Many retroversions require no treatment, and of those that do the displacement is only rectifiable by a pessary in about 10 per cent. of the cases. Similarly, all women complaining of "bearing down feelings" do not need a mechanical support. Such sensations are often merely the result of a temporary tissue laxity which disappears as soon as the patient's general health is improved.

Where a displacement is really giving rise to persistent symptoms it should be treated in most cases by operative means. As regards retroversion, ventrifixation has been extensively performed, and, on the whole, with excellent results, but the modern methods of intraperitoneal shortening of the round ligaments are an advance upon it. Of the several techniques, the best, in my opinion, is that of Barrett, in which the round ligament is reduplicated between the peritoneum and the abdominal aponeurosis in such a way as not to leave a gap on either side through which a piece of gut might pass and become strangulated. This operation, performed through a transverse skin incision in the pubic hair field, but with vertical division of the muscles and peritoneum, is a very ingenious and beautiful one, and I regard it as the ideal procedure for the majority of cases of retroversion requiring treatment.

Turning now to the treatment of cystocele and rectocele, accompanied or not by prolapse of the uterus, we note a great improvement in modern years. Pessaries are still obliged to be used in elderly enfeebled persons, but in all others I am of opinion that operative measures are indicated.

Operative Treatment of Prolapse.

In no branch of operative gynæcology has so much advance been made as in the operations designed to remedy prolapse of the vagina and uterus. The older technique of perineorrhaphy, which consisted chiefly in denuding a certain area of the vaginal wall and bringing it together with sutures, has given place to an elaborate operation whereby the perineum is built up in layers by buried sutures, the edges of the levatores ani are brought together, and the skin is united by a subcuticular suture, thus avoiding the painful tension which was associated with the deep through-and-through silkworm-gut sutures formerly employed. It is the same with anterior colporrhaphy. This operation, which used to consist merely in the removal of a diamond-shaped piece of the vaginal wall, is now an elaborate procedure, in which the bladder base is freed and pushed upwards and the fascia underlying it drawn together by sutures to make a platform for the former to rest on. Still more modern are the operations that aim at tautening up the uterosacral and the lateral cervico-pelvic (Mackenrodt's) ligaments. These structures form the sustentacular apparatus of the vaginal vault. I have performed them both, but think that the latter is the best. It is performed through an incision in the anterior vaginal wall and the cervico-pelvic ligaments are brought together in front of the cervix by a series of sutures. Amputation of the vaginal cervix is often usefully combined with other measures designed for the cure of "prolapse," and here again our technique has been much improved.

In deciding which operations are required for any particular case, the surgeon must judge according to the character of the displacement. In general, two or more have to be combined. The complete "round trip," as it may be called, consists in posterior colpo-perineoplasty, anterior colporrhaphy, shortening of lateral cervico-pelvic ligaments, amputation of the vaginal cervix, and ventrifixation. This sounds a formidable list, but so much has the technique of these operations been improved that they can all be accomplished under one anæsthetic in but little more than the time that a simple perineorrhaphy used to take in the days when I first took up gynæcology. The results are so extremely good that one can confidently promise the patient that she will be relieved of the necessity of wearing a pessary for ever after. But a few years ago operations for prolapse were chiefly undertaken to enable a patient to wear one of these instruments. The removal of the uterus for the cure of "prolapse" has happily been abandoned. It is a worse than futile operation, for it is founded on an entirely erroneous conception of the nature of the deformity.[4] On the continent an operation is much employed which consists in fixing the uterus upside down between the vagina and bladder. I have performed it, but it is far inferior to the procedures I have just mentioned. A more useful operation in certain cases is that of Le Fort, which consists in uniting the anterior and posterior vaginal walls along the middle line, so as to form a couple of very narrow vaginæ. It can only, of course, be advised in very old women.

There is another troublesome defect in women which up till lately has proved very unsatisfactory in the treatment—namely, that incontinence of urine which results from a relaxed state of the vesical sphincter following (as a rule) childbirth. It is accompanied in most cases by a certain degree of sagging downwards of the urethra and the anterior part of the vaginal wall. I have treated it lately by tautening up the vesical sphincter through an incision in the anterior vaginal wall, and have had very good results.

[4] Victor Bonney: Ibid., June 1914.

UTERINE FIBROSIS.

The recognition of this condition is an event of recent years. Its leading feature is severe and uncontrollable menorrhagia. Its pathology is not yet clearly defined. Certainly there are two distinct types of the disease—one in which the uterus is found harder than normal and presenting gross evidence of replacement of muscle fibres by white fibrous tissue, and one in which the uterine wall is flabby and soft and both the muscle and white fibres appear swollen and hyaline under the microscope. The treatment of the condition, after lesser measures have been tried and failed, is hysterectomy, and the results obtained have been most successful. Whether such cases would prove curable by exposure to massive doses of X rays has yet to be tried. Removal of both ovaries frequently fails to cure the menorrhagia, and, indeed, some of the most marked examples occur after both appendages have been removed for inflammatory disease. I have already suggested to you in connexion with fibroids that the beneficial effects of X rays are merely due to the ovarian atrophy they produce.

ENDOMETRITIS AND CERVICAL EROSION.

The pathology of cases of so-called endometritis is now much better understood than formerly, and it is recognised that certain of the conditions to which the name "endometritis" was applied really depend for their symptomatology on alterations in the deeper parts of the uterine wall (uterine fibrosis).

The limitations of the operation of curettage are better understood. It is no longer applied by recognised experts for the cure of any and every complaint referable to the pelvis. It is quite useless in cases of menorrhagia due to "fibrosis" and dangerous in cases of fibroids. Curettage of the body of the uterus is not indicated as a cure for excessive cervical discharge (leucorrhœa) unless there is evidence, from excessive bleeding, that the corporeal endometrium is unhealthy. To ablate the hypertrophied cervical glands it will suffice to operate on the cervix alone. It should be scraped with a strong sharp spoon—for the cervical glands are too firmly embedded to be removed by a blunt curette; or if a large erosion is present, particularly when combined with hypertrophy and laceration, it is better to amputate part or whole of the vaginal portion. The old operation of repairing the laceration (trachelorrhaphy) is not a good one; it leaves a much elongated cervix and utilises for the formation of the new cervical canal a portion of the eroded surface. The operation for amputation of the vaginal cervix has been much improved by the introduction of a technique that I originated some time ago, and for persistent leucorrhœa of cervical origin it is by far the surest cure.[5]

The relation borne by cervical erosion to carcinoma of the cervix is important. Practically every case of carcinoma in this situation has been grafted upon a chronic cervicitis of long standing, and the possession of an "erosion" is a definite menace of that dread disease. The treatment of erosion by applications of chemicals through a speculum is, I should say, almost given up by expert gynæcologists nowadays.

DYSMENORRHŒA.

The treatment of pain at the monthly periods still remains unsatisfactory in many cases. Dilatation of the cervix is only effective in what I have termed the "virginal" type of the disorder—that is to say, in those cases of young girls, usually unmarried, in whom mid-abdominal pain begins on, is worst on, and is limited to, the first day of the flow.

For the rest the cause of the pain, if possible, must be sought. If retroversion is present operative rectification often gives good results. Where clinical evidence of endometritis is present the uterus should be curetted as well. There remains, however, a number of patients in whose generative organs no physical defect can be discovered that would indicate operative measures. In such we have still just to fall back on analgesic drugs, of which, thanks to the energy and research of the larger firms of chemists, the practitioner has a wide choice. In exceptional cases radical operative measures have to be undertaken. Formerly these took the form of double oöphorectomy, a most unsatisfactory proceeding. Nowadays we treat these cases by subtotal hysterectomy, and it is an interesting point to which I may call your attention as showing how questionable it is that menstrual pain is ever located in the ovaries that I have never known a patient to suffer from monthly recurring attacks of pain after removal of the body of the uterus.

MIDDLE PAIN.

I may refer here to the treatment of that interesting condition known as "middle pain," in which more or less midway between two periods the patient suffers from an attack of abdomino-pelvic pain, often accompanied by a serous or sero-sanguineous discharge from the uterus. The origin of the pain has been much debated, but the theory of intermittent tubal distension is that best supported by facts. I have operated on six of these cases, and in all but one I found the abdominal ostium on one or both sides closed as a result of old inflammatory mischief. It seems that normally the tubal secretion flows into the abdominal cavity. When the abdominal ostium is closed it has perforce to flow into the uterus. But it would appear that this passage, always very narrow, becomes itself occluded during certain of the phases that the endometrium passes through between one menstrual flow and the next. During this temporary occlusion the tubal secretion is retained in the tube until the pressure becomes sufficiently high, when it is expelled past the obstruction and appears as the discharge commonly noticed by the patient during the attack. My experience leads me to hold that all cases of middle pain sufficiently severe to demand treatment should be advised abdominal section.

VACCINES IN GYNÆCOLOGY.

Vaccine treatment in gynæcology has a certain value. The best results that I have seen have been attained in some of those very troublesome cases where a chronic purulent vaginitis and cervicitis defies the older methods of treatment. Many of them are the after-results of gonorrhœal infection, the gonococcus having given place to secondary infecting organisms, such as streptococci, staphylococci, or bacilli of the diphtheroid group. It is also useful in those cases of apparently primary streptococcal infection of the cervix which one sometimes meets with.

The use of B. coli vaccines in the treatment of B. coli pyelitis and cystitis I will not touch upon further than to say that in my experience the results have been unsatisfactory—indeed, I am not favourably impressed with the value of vaccines in

[5] Victor Bonney: Ibid., February, 1913.

B. coli infection wherever the lesion be situated. Vaccines have been used in salpingitis and have been favourably reported upon, but they have not displaced operative measures as the most effective method of treatment.

CARCINOMA OF THE VAGINA AND VULVA.

Primary carcinoma of the vagina is very rare. When situated in the upper part of the canal it is removable by the abdominal route, the same technique being employed as that which I have already described for carcinoma of the cervix. When situated in the lower half the entire vagina and uterus should be removed after the technique employed by Schauta for carcinoma of the cervix. In cases too advanced for operation irradiation should give results equal to, or better than, those already reported in cervical disease.

Carcinoma of the vulva is far more commonly met with. Its surgical treatment has been much improved. Simple excision of the growth is no longer practised, but has given place to removal of the whole vulva, together with the inguinal and saphenous glands of both sides. The effects of irradiation on vulval carcinoma promise to be good, and of late this form of treatment has been applied to the parts after the excision has been carried out, in order to destroy any cancer cells that lay outside the ablated area. The result has been an immense improvement in the prognosis of this disease. The local changes that lead up to the occurrence of carcinoma in this situation have been studied.[6] In practically all the cases the onset of the malignant disease is preceded by the condition known as leukoplakic vulvitis. It is a chronic inflammatory process, characterised by intense pruritus. The vulval surface becomes whitish on account of the epithelial hypertrophy, the labia are sclerotic and shrunken, and painful cracks and fissures make their appearance later. The disease is very intractable, and where lesser measures have failed it is properly treated by excising the whole of the affected area. Such removal is urgent if a warty condition of the surface is noted or if ulceration occurs, for it is in these guises that epithelioma makes its appearance. It is a curious fact that though irradiation has an effect on carcinoma of the vulva its results in leukoplakic vulvitis have, in my experience, always proved disappointing.

CONGENITAL ABSENCE OF THE VAGINA.

I may fittingly end my recital of modern methods in gynæcology by referring to what is, perhaps, the most ingenious operation ever planned and carried out for the correction of a congenital deformity. I allude to Baldwin's operation for congenital absence of the vagina. Women thus afflicted have in the past been subject to various operations having for their aim the creation of the missing canal. All of them failed because of the insuperable tendency to subsequent contraction of the new vagina, whether fashioned of inturned flaps of skin, downturned flaps of peritoneum, or made by merely burrowing a hole between the rectum and bladder, and keeping it open by the frequent passage of dilating instruments. The American surgeon, Baldwin, conceived and successfully carried out the idea of transplanting a segment of small intestine between the bladder and rectum. The operation has now been performed 15 times by various surgeons throughout the world. Those interested in the subject will find a report of a case thus operated upon by me in THE LANCET of Oct. 11th, 1913, p. 1059. An account of the technique of the operation and a discussion of its ethics are there given. The operation achieves the formation of a vagina effective for coitional purposes, and which moreover has no tendency to contract. I may add that my case has been entirely successful and the patient is now happily married.

In concluding this imperfect survey of modern gynæcological practice, I would specially emphasise the metamorphosis that has occurred in the art within the memory of all of us. It was a branch of medicine. It has become the most surgical of all the branches of surgery. The physician for women's diseases is fast becoming extinct; his place has been taken by the gynæcological surgeon. Specialists are a necessity for the advancement of any science or art, but in gynæcology at all events pure specialism is a danger. The abdominal cavity is full of surprises, and except of necessity no one should open it who is not competent to deal with whatever he finds there. Hence the necessary enlargement of scope that distinguishes the modern gynæcologist. He is to-day an expert abdominal surgeon, especially expert in the pelvis.

[6] Victor Bonney: Hunterian lectures, THE LANCET, May 23rd (p. 1465), 1908. Berkeley and Bonney: THE LANCET, Dec. 4th, 1909, p. 1669.

TWO CASES OF ARTERIO-VENOUS INJURY.

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CASES of arterio-venous injury leading to communication between the two vessels are not now of rare occurrence, and records are needed to enable us to formulate rules for their management.

CASE 1. *Varicose aneurysm.*—A private, aged 24, received a wound on July 22nd, 1915. A small fragment of shrapnel, not larger than half a dried pea, entered the back of the left popliteal space slightly to the outer side of the middle line. An X ray plate shows the fragment lodged nearly in the middle of the space. The patient was admitted to Queen Mary's Military Hospital at Whalley on July 29th. At that time nothing seriously wrong was observed, and he was up and walking about. On August 1st he complained of slight pain, and on examination by the medical officer some extravasation of blood was noticed in the skin over the popliteal space and the area above it. The patient was then sent to bed, and on further investigation a pulsating fullness was found. On the 7th an area of extravasation the size of the palm of the hand was noticeable, and from its colour it was evidently some days old. No mass of extravasated blood was felt in the deeper tissues. There was slight fullness of the popliteal space. On flexion of the knee pulsation and a thrill could be felt indistinctly. No obvious tumour existed. Pulsation in the anterior and posterior tibial arteries was normal. Pressure on the femoral artery stopped the pulsation at once, and it recurred at once as before on removal of the pressure. Circulation in the limb appeared quite good; there was no venous engorgement, no anæsthesia, no severe pain, and no distension of the knee-joint. A splint was applied and the limb was kept raised. The next day it was noted that pulsation was more distinct and more "purring"—there was a continuous bruit. No other symptoms were apparent. During the next week daily observation showed slight, but distinct, increase in pulsation and "purr." These could be felt for about 5 inches up and down the limb, and appeared to be more superficial; otherwise no change was noticed. A tourniquet applied over the femoral artery in the groin could not be tolerated. The limb was still kept on a splint and raised. During the next week no great change occurred, but the conditions gradually became more marked.

It was decided that some more active measure was necessary. The evidence of leakage was important. The patient was under the care of Civil Surgeon (now Lieutenant) Walmsley Heywood, with whom I saw him, and we had the advantage of the opinion and advice of Colonel G. H. Sylvester, R.A.M.C. He kindly saw the case with us. The problems were: What was the exact condition of the vessels and was operation called for, and if so, what operation was to be chosen? It could be taken as probable that there had been an injury of both artery and vein and that a communication between them existed; it was thought that this was rather of the nature of a "varicose aneurysm" than an "aneurysmal varix," mainly because the local signs were increasing, and there was a local swelling, and there had been a leak. The increase in symptoms and the impossibility of treatment by pressure above made it clearly necessary to do something without long delay.

Reference to the experience of the South African War especially, and the conclusions from it drawn up in the report by Colonel Sylvester, as well as to the work of Surgeon-General W. F. Stevenson, Sir G. Makins, and Inspector-General Delorme, of the French Army, brings out clearly certain points. We may exclude, of course, some of the questions that might arise in a case seen immediately after the infliction of the injury.

1. It is not always possible to make out the aneurysm even though such may exist.

2. In aneurysmal varix the venous dilatation may not appear for a considerable time—i.e., several months or more after the injury, and in such cases usually no operation is called for unless (Makins) permanent disturbance of the circulation, quick pulse, &c., is present.

3. In late cases—i.e., those in which the injury has been inflicted perhaps some weeks before, and at least in those where the external wound has healed—when an operation is called for, several possible courses are open to the surgeon. Of these the most successful seem to be: (*a*) Ligature of the artery above and below the communication, leaving the vein alone. This was the course adopted in the present instance. (*b*) Ligature of both vessels above and below. (*c*) Incision of the sac and ligature in the sac of both vessels above and below. This is the method approved by Delorme. Proximal ligature of the artery alone, either by the operations of Hunter or Anel, seems in cases of arterio-venous communication to give the worst results. Of the cases collected by Colonel Sylvester, half the operations were followed by gangrene or death. It must be clearly understood that reference is only made to late cases of arterio-venous communication (secondary operations), and not to aneurysms or wounds of arteries nor to fresh wounds. It must also be recognised that the number of examples from the Cape War is small, too small to certainly establish yet a universal rule, though Colonel Sylvester's conclusion is, that ligature of the artery alone, close above and close below the wound, is, where practicable, the best operation. On the other hand, the more recent conclusion of Inspector-General Delorme is in favour of incision of the sac, and ligature *in the sac* of both vessels above and below. This is probably a more difficult operation, and, indeed, impossible unless the walls of the vessels are sound.

In the instance now reported I tied the popliteal artery on August 16th above and below the communication by an incision through the middle of the popliteal space. The vein was found to be dilated, and a swelling on its deep aspect apparently constituted a small (arterio-venous) aneurysmal sac. The artery was not dilated. The first part of the operation was done with the limb made bloodless. When silk ligatures had been carried round the artery above and below, the elastic bandage was relaxed and the circulation tested. As soon as it was seen that the effect of the ligatures would be satisfactory they were tied. An interval of about an inch or an inch and a half lay between them. A vein close to the main vein required ligature. It was thought that further manipulation of the vein would lead to its obliteration, while it did not seem necessary to tie it and add venous obstruction to the other conditions that might lead to gangrene. The vein was therefore left alone. Division of the artery was not considered wise, as it would have necessitated exclusion of a greater length of vessel and thus have entailed risk of cutting off collateral supply. It was noticed that a slight and variable pulsation could be felt under the vein after the ligature. This was made out to be conducted from the artery above the ligature—i.e., was due to the pull of the pulsating vessel upon the obliterated artery between the ligatures. No attempt was made to find the bit of shrapnel. The operation was no doubt made more tedious by the determination to save the vein if possible. The wound was closed and the limb kept warm and raised. A few hours later there was much pain in the calf of the leg and opium was required. The great toe at that time appeared to be blanched, though the circulation in the heel was good. By the next morning the pain had gone and the circulation in the foot was restored. There was no further trouble, and on Sept. 23rd it was noted that the patient was beginning to get about on crutches. There was no pulsation in the popliteal space nor in either tibial artery. The foot was somewhat blue after hanging down, but the condition was otherwise quite satisfactory.

I had throughout the advantage of the special experience of Colonel Sylvester, and at the operation the assistance of Lieutenant G. Norman, R.A.M.C., and of Lieutenant Walmsley Heywood, R.A.M.C., under whose care the patient was. Lieutenant T. Heywood, R.A.M.C., gave the anæsthetic.

CASE 2. *Arterio-venous anastomosis.*—A private aged 28. On August 6th, 1915, a small piece of shrapnel entered the right posterior triangle of the neck at the junction of the middle and outer third of the clavicle and just above the bone. The fragment seems to have found exit at the back of the left shoulder. The patient suffered much from shock, as the shell burst in the house in which he was. He was admitted on August 17th, and then complained of pain in the neck, running down to the shoulder and into the axilla; he remarked that he had pain over the end of the right thumb and numbness over the first joint. The report sent with him was: "Over aortic area below clavicle a loud systolic and diastolic bruit audible, and thrill can be felt on palpation." No foreign body was seen in the radiogram. On August 18th there was slight fullness above and below the right clavicle. The pulse in the third part of the subclavian was increased in force. Below the outer end of the clavicle was a distinct "purring" thrill felt only over an area the size of two finger tips. This thrill was not perceptible above the clavicle or in the axilla. The radial pulse on that side was weak and delayed. There was no definite tumour. A loud roaring bruit continuous but also pulsating could be heard over the same area as the thrill, and was conducted along the clavicle and into the posterior triangle, and was audible in less degree over the upper part of the chest. No venous distension was visible. The pupils were unaffected. The pain in the neck and axilla had by this time gone, but he had pain on the inner side of the arm on abduction. When the patient sat up the pulsation became more distinct and the "purr" less so. On the 20th it was noted that sitting up was no longer accompanied by increased pulsation, but there was still pain on abduction and no other change. By the 28th he had been up and about for some days to see whether exercise made any difference. The pulsation in the neck was more distinct. The "purr" was nearer the middle line, but varied with posture. Probably there was not any material change. There was still some pain down the upper arm to just above the elbow, and the arm was weak, though he moved it better.

In this case also we had the benefit of Colonel Sylvester's advice. He thought it was one of aneurysmal varix, and agreed that at present, at any rate, there is no call for an operation. The patient was under the care of Lieutenant T. Geddie, R.A.M.C., with whom I saw him. The variation in pulsation and thrill with change in posture suggests that there may be local dilatation of the artery from injury to its wall, and thus pressure on the vein rather than actual communication between the two, though the latter is more probable. Time will probably clear up the doubt. The pain is most likely due to injury to one of the nerves by the shrapnel. At the end of September all the pain had ceased, but the bruit was more loudly to be heard all over the upper part of the chest, and in the neck and even down the arm. Pulsation in the neck just above the clavicle was more distinct, but the thrill varied and was sometimes absent. The man could use the arm freely and felt little if any discomfort.

I am indebted to Colonel S. C. B. Robinson, A.M.S., officer commanding Queen Mary's Military Hospital here, for permission to publish these two examples.

THE DIAGNOSIS AND TREATMENT OF MEDIASTINAL PLEURISY.

BY LOUIS RENON, M.D.,
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MEDIASTINAL pleurisy is a rare affection; I have met with but few instances of the kind in my medical career, and in every one the diagnosis has been a matter of difficulty. Nevertheless, I was enabled to recognise the nature of the case, thanks to the teaching of my regretted chief, Professor Dieulafoy, who thoroughly elucidated the question upwards of 15 years ago.[1] To arrive at a diagnosis in a case of mediastinal pleurisy, the first thing is that it shall cross our minds, and this it is likely to do only when the case before us displays the typical symptoms of the disease. The clinical picture was almost diagrammatic in its clearness in the last case that came under my notice, so I will briefly relate the history.

The patient was a man, 62 years of age, who in February last was suddenly seized with shivering and oppression, his temperature running up to 39·8° C. The most careful examination of the chest failed, for several days, to reveal the least pleuro-pulmonary sign. On the eighth day, the temperature being still high, percussion over the back of the chest caused him some pain. On the twelfth day the pain became limited to the left costo-vertebral fossa, opposite the third and fourth dorsal vertebræ. There was an area of partial dullness on percussion the size of a crown piece, and on auscultation one heard a distant, blowing sound on expiration. It occurred to me that it might be a localised pleural effusion, but exploratory puncture with a needle four centimetres in length proved negative. On the fifteenth day other signs supervened which at once led me to suspect inflammation of the mediastinal pleura. To begin with, there was a dry, paroxysmal cough of the pertussis type. Then the voice underwent a change, from clear it became harsh, muffled, obscure. Respiration, which had been noiseless, could now be heard at a distance and became snoring, in fact almost amphoric. Lastly, swallowing became difficult, solids especially not passing easily. This group of symptoms strikingly corresponded to Dieulafoy's mediastinal syndrome and the diagnosis of mediastinal pleurisy seemed to be certain. This, however, had to be verified by laboratory means. To begin with, the patient was skiagraphed. On the screen, in the front anterior position, we could see quite clearly a widening of the normal supracardiac shadow. In the left front posterior position a widening was seen, rather to the left, but in the left posterior oblique position the mediastinum was seen to be filled with a dark, non-pulsating mass. I administered a cachet of bismuth, which remained suspended for ten seconds before passing from the œsophagus into the stomach. We therefore diagnosed a tumour of the posterior mediastinum pressing upon the trachea, the nerves, and the œsophagus. The sharp outlines of the skiagraphic image, a certain mobility of the image on changing the patient's attitude, led us to suppose that it was a liquid tumour. Now as to the nature of the liquid, Was it serous, purulent, or hæmorrhagic? Clinically it was impossible to say, but examination of the blood showed 4,500,000 red and 10,900 white corpuscles. This hyperleucocytosis militated in favour of the effusion being purulent and so did the high temperature. Was it due to the pneumococcus, the staphylococcus, &c? The sudden onset and the maintenance of a high temperature morning and evening could hardly fail to suggest to us the probability of its being a pneumococcal infection. The diagnosis of purulent pleurisy of the posterior mediastinum, of course, entails a gloomy prognosis on account of the probable progressive increase of intrathoracic pressure, the possibility of the effusion opening into one of the big mediastinal vessels and, more particularly, by reason of the difficulty of surgical intervention in this region.

By way of treatment I ordered intramuscular injections of lantol (small-grained electric rhodium), quinine, cachets of suprarenal and pituitary extract, and mild counter-irritation of the back of the chest by means of dry cupping. In presence of the persistence of pressure symptoms, the high temperature, and the depreciation of the general health, I was beginning to seriously consider the desirability of surgical intervention when, on the twentieth day, after a violent attack of coughing, the patient began to bring up purulent sputum, without any disagreeable odour, but thick and sticky. In the course of a few hours he spat up 300 grammes of expectoration. Bacteriological examination of the sputum showed the presence of an almost pure culture of pneumococcus. The temperature at once fell to 38°C., the paroxysmal cough subsided, and the pressure symptoms disappeared. I gave him daily subcutaneous injections of gomenol (5 per cent.), and in the course of another fortnight the expectoration ceased entirely, the temperature returned to normal, and he became convalescent. Recovery was completed by residence on the shore of the Mediterranean.

In this case of encysted purulent pleurisy of the posterior mediastinum the diagnosis was comparatively easy, simply because the possibility of its being such a case was present in my mind, skiagraphy having merely confirmed and rendered certain the diagnosis.

The diagnosis of mediastinal pleurisy can be arrived at on a reasoned practical basis if we carry out seriatim the following examinations. In the course of an acute febrile affection any sign of compression within the mediastinum should lead us to entertain the idea of a solid or liquid tumour in this region. This will also occur to us even more markedly when the mediastinal syndrome is complete. I may recall that this syndrome, due to compression of the trachea, the œsophagus, the nerve trunks, the vessels, &c., is manifested by attacks of suffocation, retraction, amphoric breathing, paroxysmal cough, disturbances of the voice and of the complementary thoracic circulation. Directly we find ourselves in presence of this syndrome the patient must forthwith be examined by the aid of the X rays. Stereographic skiagraphy is particularly useful in such cases. Changes in the voice necessitate examination of the larynx with the laryngoscope. Bronchoscopic examination is indicated in

[1] Dieulafoy: Clinique Médicale de l'Hôtel Dieu de Paris, vol. iii., 1889-99, p. 23.

presence of amphoric breathing because it yields very valuable information, as I have found in several cases of broncho-œsophageal cancer with neoplastic adenopathies in which it has enabled me to arrive at an early diagnosis.

These various items of information will enable us to conclude in favour of the existence of a tumour in the anterior or posterior mediastinum, the latter being of much more frequent occurrence than the former, and to assert that this tumour is, or is not, pulsatile. This will suggest or discard the possibility of the tumour being aneurysmal. In some instances, as in the one mentioned above, X ray examination may yield information as to whether the tumour is liquid or solid.

If we are enabled to decide that the tumour is liquid it behoves us to try to ascertain whether it is serous, hæmorrhagic, or purulent. Exploratory puncture will be necessary in the dull area that will have been outlined in one of the vertebral fossæ. If the needle, pushed in as deeply as possible in the dull area, fails to strike fluid, examination of the blood, should it show hyperleucocytosis, especially of the polynuclear variety, may afford useful information from this point of view. Liquid tumours of the mediastinum may be pleural or extrapleural, and the diagnosis between the two is often a matter of some difficulty. There are abscesses of the mediastinum in connexion with cancer of the œsophagus and, probably more frequently than one is apt to suppose, we get dermoid cysts of the mediastinum that may suppurate.

Some eight years since, in a young woman 22 years of age, I came across a dermoid cyst of the whole mediastinum but the exact diagnosis only became possible post mortem. The affection was characterised by high temperature, severe dyspnœa, a paroxysmal cough, slight difficulty in swallowing, tachycardia, and dullness at the base of the right lung. An exploratory puncture in that area gave issue to a greenish fluid containing yellowish grumous fatty material which, under the microscope, was seen to be composed of amorphous matter. Skiagraphy showed both apices to be clear and both bases obscure, especially on the right. I diagnosed interlobar pleurisy or a mediastinal collection of unknown nature and had the patient operated. An incision into the eighth intercostal space on the right side behind gave issue to a quantity of serous fluid mixed with yellowish grumous matter. On introducing the finger into the cavity it withdrew a lot of sebaceous matter. The dyspnœa did not diminish and the patient died three days later when, to our surprise, we found an enormous dermoid cyst of the mediastinum, weighing 13 kilogrammes, with numerous pouches, two of which were suppurating. Most of them contained a mixture of sebaceous matter and greenish fluid, with a few bristles; two of them contaiced a semen-like fluid; one big pouch in front was filled with very thick sebaceous matter, with a lot of long fine black hairs, cartilaginous nodules, plates of bone, and fatty nodules.

I have dwelt at some length on this case in order to show the difficulty of diagnosis when we are called upon to differentiate these dermoid cysts from mediastinal pleurisy, especially when one or more of the pouches happen to suppurate. Nevertheless, in this case I think I ought to have made the diagnosis, and doubtless should have done so had I given due consideration to the presence of the fatty matter floating in the greenish liquid withdrawn by the exploratory puncture.

The treatment of mediastinal pleurisy is difficult to lay down on general lines because it varies according to individual circumstances. The administration of 5 to 10 centigrammes of suprarenal and pituitary powder, intravenous or intramuscular injections of lantol (electric colloidal rhodium), or electrargol, may render great assistance in combating the infection. When we feel pretty certain that we are in presence of an encysted purulent effusion in the mediastinum, the question of operative intervention will have to be adjudicated upon. In spite of the difficulty and risk of the operation we have no alternative when the temperature remains high, when pressure effects produce an intense mediastinal syndrome, and especially when, by the twentieth day, nothing has been coughed up.

Should pus be coughed up, usually in small quantities, we must try to facilitate expectoration by means of ipecacuanha or by injections of emetine, and we may try to disinfect the abscess cavity by means of injections of gomenol. Lastly, in cases where the cavity empties itself imperfectly, bronchoscopy may enable us to act directly thereupon by introducing an antiseptic fluid into the cavity, as is done in pulmonary cavities by Dr. Guisez and Dr. Stodel. Constitutional measures by the open-air treatment and the administration of tonics will complete the local treatment.

CLINICAL RESULTS OF 1,000 INTRAVENOUS INJECTIONS OF GALYL.

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IN this paper I desire to record experiences in connexion with the administration of one of the newer specific remedies, galyl, in a series consisting of somewhat over 1,000 consecutive intravenous injections, given principally at the London Male Lock Hospital in the period from June to November, 1915, inclusive. My remarks will be confined to clinical observations only, no systematic study having been undertaken of the effect on the Wassermann reaction or of certain other questions chiefly of academic interest.

Galyl, or tetraoxydiphosphaminodiarsenobenzene, is one of several synthetic substitutes for salvarsan which have recently appeared on the market. It is the invention of a French scientist, M. Mouneyrat, and while it is a substance with a high arsenic content (35·3 per cent.), it possesses some claim to originality in that it contains in its formula the element phosphorus (equal to 7·2 per cent.), while the atoms of arsenic are graphically represented as differently grouped. A comparison of the full doses advised for galyl and for salvarsan and neosalvarsan indicates that galyl as administered actually contains only about half as much arsenic as the others, a point of passing interest in view of the recent suggestion that the activity of these agents may be not wholly dependent on the arsenic moiety. In the leaflet which accompanies the preparation the assertion is made that it has the advantage over the other arsenic derivatives of being non-toxic to nerve tissue.

The preparation is supplied in five different strengths—viz., 0·4 grm., stated to be the full dose and to correspond to 0·9 neosalvarsan; three smaller, 0·25, 0·30, and 0·35 grm.; and a larger, 0·5 grm. It is left to be inferred that the large dose is to be used only very occasionally, or in other words that it is a specially powerful one. I may say, however, that during a recent temporary shortage of galyl I was supplied with several 0·5 grm. tubes and used them in place of the 0·4's with indistinguishable results.

The substance itself is a light-yellow powder which looks not unlike salvarsan, is also readily oxidisable, and is put up in similar but larger tubes. It is readily soluble in distilled water, giving a clear olive-yellow transparent solution, neutral in reaction, which upon standing a few moments becomes darker in colour. Perhaps I should modify this by saying that an occasional ampoule will be found giving a slightly hazy solution, but apparently this does not indicate deterioration, and no unusual result has been observed in such instances. It is used in precisely the same way as neosalvarsan, either in concentrated solution in the 10 c.c. piston syringe, or more dilute in the familiar burette apparatus, preceded and followed by a little distilled water. This last is the safe method where one is giving intravenous injections only occasionally, and is useful also in institutions where good assistance is available and large numbers of injections have to be given quickly.

Hereunder are condensed notes of a few cases of syphilis in various stages chosen at random from among those treated by galyl and which may be regarded as fairly typical of all. By way of preface, let me say that it is our routine hospital practice to advise a minimum of three (full) doses of galyl at weekly or fortnightly intervals, these followed by mercury and iodides for at least two years, then a rest of a few months and a Wassermann test.

CASE 1.—The patient, aged 26, had been exposed to infection early in May, 1915. Chancre 26 days later, roseola following in 12 weeks.

Upon admission there were found to be well-established secondaries; general glandular enlargement; condylomata and ulcerative lesions of the mouth, scrotum, and toes; falling hair; pharyngitis; and a very profuse polymorphic outbreak covering the trunk and extremities, large scaly papules predominating and studding the flexor surfaces of the forearms almost to the exclusion of other types. The face was covered with squamo-dermato-syphilides and dirty-brown blotches, and there were impetiginised areas at the corners of the mouth, blepharitis of the right eye, and circumscribed scaly and hyperkeratotic lesions of the palms of the hands. An indurated button at the site of the chancre (the frænum). The symptoms had appeared while the patient was in South America, and during a protracted voyage to England he had experienced all the customary early complaints—cephalalgia, chilliness, malaise, bone-ache, and anæmia, with marked mental distress and depression. Temperature normal. Wassermann test, positive.

Treatment and course.—Three intravenous injections of galyl, 0·4 grm., were given at weekly intervals. No local or general reaction. Clinical improvement was immediate, the lesions beginning to retrogress and the colour to become less intense, while languor and subjective symptoms in general abated. Sixth day: Smaller papules represented by stain, larger ones becoming flattened, shrunken, and paler; face less scaly and more presentable. Seventh day: Condylomatous lesions gone, blepharitis also gone, mouth practically clear, a large ulcerated plaque on the inside of the upper lip being entirely healed. The induration at the site of the healed chancre seems softer and smaller. The patient expressed himself as "Feeling extra fit," and added, "I want to get a hustle on me." Eighth day: Second injection. Ninth day: Ulcerated lesion of foot, $\frac{3}{8} \times \frac{3}{4}$ inch, entirely healed; rash much faded and its papular character about vanished, except for a few papules on the forearms. Fifteenth day: Third injection. Face practically clear, smooth, and not scaly. All papules flattened out. Only a faded and relatively inconspicuous staining remains.

CASE 2.—The patient, aged 21, had been exposed to infection in July, 1915. In 18 days there was swelling of the penis, and later a discharge.

Upon admission there was found to be tense bluish indurated œdema of the penis; greatest circumference, 7 inches; discharge of pus; phimotic. Moderate pain; faint roseola; general hard shotty enlargement of glands; angina; mucous plaques; tonsillar ulceration; malaise. Temperature, 100° F.

Treatment and course.—Intravenous injection of galyl, 0·4 grm. Next day: Subjective improvement; evening temperature normal. Third day: Local condition better, tissues softened, inflammatory phenomena abated. Circumference of penis, 5 inches. Fourth day: No œdema. Circumference of penis, 4½ inches (normal). Roseola disappeared. Urethral chancre confirmed. Circumcised. Eighth and fifteenth days: Galyl, 0·4 grm. No local or general reactions throughout.

CASE 3.—The patient, aged 32, had a well-marked maculo-papular rash of three weeks' duration. Buccal lesions. Headache. Feeling "rotten." Wounded during the spring abroad, he had but recently been discharged from a German hospital, where it had been found necessary to amputate and re-amputate four times the infected wounded leg. The stump was drained continuously for four months.

Treatment and course.—Intravenous injection of galyl, 0·4 grm., at 9 A.M. Temperature: 2 P.M., 102°; 6 P.M., 104°; 10 P.M., 101·5°; 2 A.M., normal. No rise thereafter. Second day: Left the hospital. Sixth day: Seen again. Rash fading rapidly. Feeling very "fit." Did not return thereafter for further treatment, sending word to the effect that this was "unnecessary" as he was now perfectly well. During the time that his temperature was running high he felt warm, but experienced no other discomfort.

CASE 4.—This patient, aged 31, had had syphilis 12 years ago, and had been treated for ten months with mercury intramuscularly. He enlisted in the army in August, 1914, but shortly thereafter became unfit through inflammation of the throat, and later becoming also deaf.

On admission there was found to be extensive ulceration and destruction of much of the soft palate. Speech was mostly unintelligible; difficulty in deglutition; odorous naso-pharyngitis; very deaf. Scars on legs. For five weeks the condition has been rapidly progressive.

Treatment and course.—Three injections of galyl, 0·4 grm., at weekly intervals. After the first injection the progress of ulceration was arrested. Third day: Secretion lessened, less offensive; hearing somewhat better. Within three weeks the cleft in the palate was reduced almost to the size of a sixpenny piece, speech was vastly better and intelligible, and the patient had gained 8 lb. in weight and there was no malodorous secretion. Two months later he reported hearing and speech to be "as good as ever." He had gained a stone in weight, and he stated that he thought some gummatous scars on the inner anterior aspect of the left shin were fading.

CASE 5.—The patient, aged 40, had returned from abroad for treatment of a gummatous ulceration of the nose and adjacent part of the face, this area being bluish or purplish-red and exhibiting a dozen punched-out ulcers about pea-size or smaller. Married; several healthy children; no previous history of lues.

Treatment and course.—The early return of the patient to certain military duties being imperative and his leave limited to ten days, three intravenous injections of galyl, respectively 0·35, 0·4, and 0·4 grm. were given on the second, sixth, and tenth days, plus mercurial inunctions and iodides to saturation. Prompt improvement followed, and when leaving hospital the ulcerated areas were closing rapidly and some of them had already closed, whilst the colour of the surrounding skin was much paler. The patient has since reported complete symptomatic recovery, is enduring hardships, and is enjoying excellent general health.

I have said that the cases just summarised may be regarded as fairly illustrative. A perusal of the histories will at once suggest that in clearing-up symptoms the new preparation differs little if at all from its older rival. Indeed, at times I have been inclined to think that its effect on the large papular syphilide, a lesion most resistant to salvarsan, is somewhat better, from a comparison with concurrent cases in which the latter was used. The first case cited illustrates this well; whereas a woman to whom I gave two intravenous injections of 0·45 grm. neosalvarsan nearly three

months ago has still flattened papules on the flexor surfaces of the forearms. Nevertheless, I offer this suggestion with some reserve as I am not at the moment fully convinced that it is uniformly the case. It is certain that patients experience the same feeling of buoyancy and of wellbeing after galyl; appetite and nutrition improve, and there is frequently an increase in sexual vigour. Mr. Ernest Lane tells me that he believes relapses are rather more frequent than with salvarsan, and I have seen two cases of recurrent throat symptoms, both after a single injection of 0·4 grm. galyl, and both of which cleared up after a second dose.

Second only in importance to effectiveness in clearing-up symptoms is the question of toxicity. More than 150 deaths are credited to salvarsan, to say nothing of innumerable accidents and severe reactions, mostly in the early days and variously attributed to the water used, to improper preparation of patient, to pathological conditions, to too frequent administration, or to errors of technique. Nor has the use of certain other of the newer preparations been without disaster, as witness the cases so graphically described by Mr. Lane and Mr. J. E. R. McDonagh, of the honorary staff of this hospital. Some of these I have been privileged to examine, and I found them rather impressive. At a recent meeting of the Dermatological Section of the Royal Society of Medicine I exhibited a well-marked case of arsenical intoxication following one injection of 0·6 grm. novarsenobenzol, being one previously reported by Mr. Lane, showing ten months after injection profuse raindrop pigmentation, keratosis of the palms and soles, persistent fine branny desquamation, and cicatricial alopecia.

So far as I am aware no fatality has as yet been reported with galyl. Neither has there been reported any undoubted case of arsenical intoxication, but in this connexion it is to be remembered that the remedy is new and its literature at the time of writing very meagre. In a certain small number of cases of the present series there have been mild reactions shortly after or within a few hours after injection, but in only one, summarised above, did the temperature reach 104°, and in this case the presumption is strong that it was due to an endotoxic rest. If a patient has partaken of a hearty meal shortly before an intravenous injection is given vomiting is not uncommon with any drug, perhaps with chilliness or a rigor, pyrexia, or even purging and enuresis. If, however, he has been properly prepared, has rested well, and the alimentary tract has been cleaned overnight by a brisk purge and an enema if required, such symptoms are at least not usual.

An interesting complication which I have encountered twice was a reaction resembling serum sickness, large urticarial wheals which itched intensely appearing within a few hours of administration and remaining two or three days. One of these patients has had a second injection, preceded by adrenalin, no symptoms then appearing. A quite recent case developed a moderate erythema of the forearms within 24 hours, and has not been given a second dose; this redness disappeared in a day or two and there have been no further developments. The subject was anything but robust and had suffered from morbus coxae. I have notes of seven cases exhibiting a pseudo-Herxheimer reaction, all the symptoms seeming to be temporarily aggravated, the throat more congested and painful, and rash and malaise accentuated. It is, however, but fair to say that any one of the reactions and symptoms just enumerated is at least as frequent with salvarsan and neosalvarsan, and none is typical of arsenical poisoning, very probably being due, as the studies of Yakimoff and others indicate, to the release of various bacterial endotoxins.

AN EPIDEMIC OF JAUNDICE OCCURRING AT ALEXANDRIA.

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AND
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DURING the months of June, July, and August, 1915, we had the opportunity of observing and treating a large number of cases of jaundice admitted to the medical wards of a general hospital. These cases presented several features of great interest, not the least being that they arose almost without exception from a single camp. The clinical picture was so constant and differed in so many respects from that of ordinary catarrhal jaundice that we regard the disease as a definite clinical entity.

On admission the patients complained of progressive weakness and loss of appetite of from seven to ten days' duration. Constipation was present in about half the number; the remainder had suffered from diarrhœa of varying severity for two or three days. In most cases the diarrhœa had ceased before the onset of jaundice, which had been present for three or four days and was frequently accompanied at the onset by pyrexia of mild degree; the majority were apyrexic throughout their stay in hospital. Nausea and vomiting were frequently complained of; vomiting in 4 cases persisted for several days after admission and in one of those was particularly severe. Headache was practically constant, and in several cases severe headache persisted throughout the patients' stay in hospital. The patients were of remarkably good physique, but there was considerable loss of flesh in most cases. The jaundice varied in intensity from a slight involvement of the conjunctivæ only to a profound generalised condition. In the mild cases the jaundice persisted for a few days only; in the severe it remained for several weeks and in some was still present when the patients passed from observation.

The tongue in all cases was moist and strikingly clean. The liver was invariably enlarged, sometimes extending as much as 3½ inches below the costal margin, the vertical dullness frequently measuring 9 inches in the nipple line; there was marked tenderness. The spleen was similarly greatly enlarged, frequently extending upwards to the seventh rib in the posterior axillary line, one or two inches below the costal margin, and sometimes reaching as far forwards as the nipple line, splenic and liver dullnesses not infrequently merged one into the other. The spleen was tender, and pain in this region was a common symptom.

The heart presented a very striking degree of enlargement in practically all cases. This enlargement was so definite and so persistent, associated as it was with giddiness and dyspnœa on exertion, as to make it almost the leading feature in the clinical picture. Cardiac dullness was almost constantly increased to the right, the right border of the heart frequently extending 2 inches, and in one case 2½ inches, to the right of the midsternal line. The cardiac impulse was frequently palpable to the right of the sternum. The apex beat remained internal to the left nipple line, the increase in the size of the heart apparently affecting the right side only. The heart sounds remained clear; in one case only an apical systolic murmur was present on admission. There was never any

evidence of tricuspid regurgitation. The pulse, which was of good strength, was slow during the persistence of jaundice, being frequently less than 50 beats per minute, returning later on, however, to a more normal rate. Sinus arrhythmia was constant and no abnormal arrhythmia was met with. The increase in the size of the heart, the liver, and the spleen was frequently confirmed by X ray examination. The lungs presented no abnormal signs; at no stage was there any sign of congestion.

The stools during the persistence of jaundice were pale and for the most part constipated. The urine was concentrated, acid, of high specific gravity, and contained bile pigment. There was no albumin. Casts were not present and leucin and tyrosin were absent. The blood was normal. There was no general lymphatic glandular enlargement, but several cases presented definite enlargement of isolated glands in the axillæ and groins for which no local cause could be assigned. Several of the patients were suffering from insect bites on admission; in the majority, however, the skin was intact. General nervous weakness and mental depression were present almost always, and were extreme in the patients who presented marked jaundice. The superficial and deep reflexes were present and active in the majority of the cases; the knee-jerks were absent in one; the abdominal reflexes were absent in one and enfeebled at one stage in another. In a fourth there was, on admission, a short quick extension of the great toe on either side on plantar stimulation, later on replaced by a normal response. There was no ankle or patellar clonus.

Most of the patients remained under observation for a period of from three to four weeks, when they were sent to England to complete their convalescence, as progress towards recovery was extremely slow, even in mild cases in which the jaundice quickly disappeared. In all patients marked general weakness persisted, and the majority were unable, after having been out of bed for two or three weeks, to perform even moderate exercise, such as walking upstairs, without inducing dyspnœa and giddiness, which were accompanied by marked increase in the pulse-rate; there was no præcordial pain. Some enlargement of the heart persisted in practically all cases, and was not reduced by rest. The enlargement of the liver and spleen persisted to a slight extent. Several patients, admitted after having been discharged from other hospitals to light duty and convalescent camps, still complained of great weakness and presented cardiac, hepatic, and splenic enlargement, although a period of two months had elapsed in some of these cases since the jaundice had subsided. There were no fatal cases. All were treated with absolute rest in bed for several days. Different groups of cases were severally treated with castor oil, saline purgatives, and "intestinal antiseptics," including beta-naphthol, bismuth salicylate, salol, and guaiacol carbonate. Drug treatment, however, had no apparent influence upon the course of the disease.

We wish to express our thanks to Colonel Austin, officer commanding the General Hospital, for his sympathetic interest in our clinical work, and to Lieutenant-Colonel Lister, in command of the Medical Division, for permission to publish the records of the cases. We are indebted to Lieutenant D. Thomson, R.A.M.C., for furnishing us with a report upon the condition of the blood.

CENTENARIANS.—Mrs. Catharine Morrison, of Greenock, whose death is announced, reached the 100th anniversary of her birthday six months ago. She was able until September last, according to the *Times*, to attend to the business of the little shop which she kept.—Mrs. Anne Allen has died at Bath at the age of 104.

PNEUMOSAN IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

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IN THE LANCET of August 8th, 1914, I gave an account of the immediate effects following pneumosan treatment in 103 cases of pulmonary tuberculosis, and promised to report after an interval to what extent the initially favourable effects in these patients should be maintained. It must be stated at the outset that cases treated at the clinic are rigorously kept under observation, and their homes frequently visited by the nursing staff, even after discharge from active treatment. Thus, improved hygienic conditions, which in greater or less degree almost invariably reward our efforts, undoubtedly play no small part in influencing the results. It was impossible for me to eliminate this factor, for I am convinced that no method of treatment which does not include the setting in order and the constant keeping in order of the patient's home has more than a transitory influence upon the course of tuberculosis. Indeed, experience has shown me that it is in those families who respond most readily to the advice tendered by the visitors that improvement is most rapid and most permanent. On the other hand, there is the true old adage, "You never can cure a fool of consumption." With the exception of this most necessary basis, the group of patients under consideration have received no treatment other than pneumosan injections, on the lines indicated in my previous report. The initial evidences of improvement then noted were improvement in appetite, renewed feeling of general well-being, increase in weight, diminution of cough, and defervescence of temperature. At the date of my first report (when I had been using pneumosan for 18 months) the position was as follows:—

TABLE I.

—	Stage (Turban).			Very advanced.	Total.
	I.	II.	III.		
Deteriorated	1	0	2	6	9
No change	5	2	5	3	15
Improved	10	10	8	5	33
Much improved	13	8	9	5	25
Disease arrested	7	3	1	0	11
Total	36	23	25	19	103

The term "improved" indicates improvement chiefly of symptoms, physical signs being but little altered. "Much improved" indicates great improvement both of symptoms and physical signs. "Disease arrested" is applied only to cases free from all symptoms and showing no physical signs of activity.

In order to be on the safe side I never designate any case as cured. In spite of the above results, which appeared to me satisfactory, I saw no reason to credit pneumosan with specific properties, but regarded it merely as a tonic and alterative which, in conjunction with sustained improvement in his environment and mode of living, put the tuberculous individual in a position successfully to combat the invading bacilli. However this may be, the results of the treatment certainly have surpassed my expectations, the modifications which

have taken place in the foregoing table during the past 16 months being as follows:—

TABLE II.

—	Stage on admission.			Very advanced.	Total.
	I.	II.	III.		
Deteriorated...	2	0	2	7	11
No change	0	0	1	4	5
Improved	7	3	9	5	24
Much improved	11	12	10	3	36
Disease arrested	16	8	3	0	27
Total	36	23	25	19	103

I have been especially struck by the progress of cases in Stadium II.; every one of my cases in this category has improved under pneumosan, and in one-third of them the disease may be regarded as arrested. The number of advanced cases included in the table is large, owing to the fact that pneumosan was tried as a forlorn hope where no other treatment seemed applicable. Five of these patients died, and I am not able to report arrest of the disease in any of them. It is difficult also to eliminate the element of "spes phthisica" which is always pronounced in such cases. With regard to the course of patients in Stadia I. and III., I leave the figures to speak for themselves. One man in Stadium III. has been doing full work with frequent overtime in a factory for more than 18 months and declares himself perfectly fit, yet his sputum (when obtainable) still contains T.B. I have therefore classified him as "Much improved." He affords a good example of a carrier.

I do not propose to discuss the total number of cases with T.B. in sputum before and after treatment, for unless the examinations could have been more repeatedly and fully carried out than time allowed they would be misleading; I will only say in passing that the findings, so far as they go, appear satisfactory, 31 per cent. having lost T.B. while under treatment.

All the men in the last two groups are now doing full work, and in many cases are working overtime. Two have enlisted. In the case of several children with hilum tuberculosis and secondary bronchitis X ray examination shows that well-marked fibrosis has taken place and the bronchitis has quite cleared up. Space does not permit me to enter into detail concerning individual patients, though many are extremely interesting.

It will be observed that if the "very advanced" cases be excluded the number of patients who have reached the last two groups is 60, which gives a percentage of over 71.

One great point in favour of pneumosan is that I have never known any untoward effects to follow its administration. A rise of temperature not infrequently takes place from one to three days after injection, but is not accompanied by general symptoms suggestive of a tuberculin reaction. Again, there is occasionally pain, deep in the arm, at the site of injection, but I have never seen any signs of inflammation.

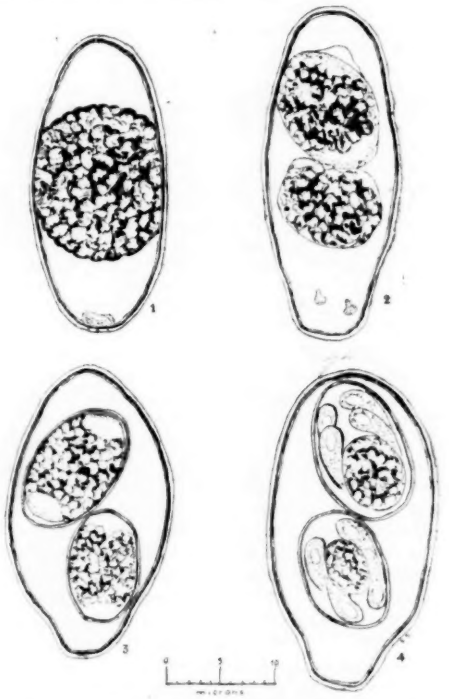
The results recorded appear to me to warrant a more extended use of pneumosan in pulmonary tuberculosis, though, like every other remedy in this disease, it should be used in conjunction with careful supervision of the patient's home conditions, and not as though it were sufficient alone to restore the diseased to a normal state, or, this being achieved, to keep them therein.

Birmingham.

THE DEVELOPMENT OF THE OÖCYST OF THE HUMAN COCCIDIUM: AN ADDENDUM.

BY C. M. WENYON, M.B., B.S., B.SC. LOND.

THE following is an addendum to the Observations on the Common Intestinal Protozoa of Man published in THE LANCET of Nov. 27th.



The four figures here shown represent the stages in the development of the oöcyst of the human coccidium which has been found in cases from Gallipoli. The development of the coccidium takes place in the epithelial cells of the gut, there being an asexual cycle followed by the production of male and female sexual forms. Fertilisation of the female gamete takes place in the gut and the zygote so formed becomes enclosed in an oöcyst which is passed in the fæces and completes its development on the ground or in water. The first stage in the development is the retraction of the protoplasm so that it does not completely fill the cyst (Fig. 1). Next, two sporoblasts are produced (Fig. 2) by division of the single mass, and then each of these becomes enclosed in a sporocyst (Fig. 3). The final stage is the production in each sporocyst of four sporozoites and a residual mass of cytoplasm (Fig. 4). When this stage is reached, and not till then, the oöcyst is infective, and if swallowed the sporozoites escape, enter the epithelial cells of the gut, and recommence the asexual cycle. The oöcysts of coccidia are generally very resistant structures which can withstand a great amount of drying.

AN exhibition, representing domestic economy, will be opened at the Institute of Hygiene on Jan. 17th, 1916, when an Anti-waste Campaign will also be inaugurated. Cooking economy and household economies are to be the special feature of the exhibition.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Demonstration of Cases and Specimens.

A MEETING of this section was held on Nov. 26th, Dr. R. HUTCHISON, the President, being in the chair.

Dr. EDMUND CAUTLEY and Mr. N. BISHOP HARMAN showed a case of Optic Neuritis, (?) due to X Rays. The patient was a boy aged 8¼ years, one of three children, the others being healthy. He had had measles in infancy, diphtheria three years ago, and double otorrhœa last June. On July 22nd he attended hospital for pains in the head of five to six months' duration. The pain was frontal, usually at night, and preventing sleep; occasional during the day. He had been treated for ringworm by X rays one week previously. When he was first seen there was marked neuroretinitis. Vision 6/6. No paralysis. Some uncertainty, almost amounting to incoördination, in the right hand, and tendency to point to the right with that hand. Sudden jerking or twisting of the limbs; jumpy but not clumsy. Gait and reflexes normal. July 29th: He had had one attack of headache and vomiting. Superficial and deep reflexes active. Vision 6/6. Sept. 2nd: He had had no headache or vomiting, except for one sudden attack of pain across the eyes a few days ago. Normal reflexes. Hearing normal. No otorrhœa. Marked swelling and striation of optic discs. Vision 6/6. On Sept. 30th he was admitted as an in-patient. Since then he had had no headache or vomiting. Muscular control had recovered. In 38 days he gained 54 oz. in weight, and, except for the eyes, he was apparently in good health. No focus of infection had been found; there was no tuberculous history, and the Wassermann reaction was negative. The action of the X rays caused complete baldness, but the hair was growing again. According to the history the pains in the head began before the ringworm was treated. Sept. 21st: Chronic optic neuritis was present in each eye. It was rather more marked in the right eye, the elevation of the disc being about 4 D., exceeding that in the left eye by 1 to 2 D. There was 1 D. of hypermetropia, as measured by retinoscopy, at the macula of each eye. In the left eye there were a few small spots of exudate between the disc and macula. The degree of intensity was more marked in the right eye, but, as far as the age of the neuritis could be judged, there was no appreciable difference between the two eyes. Vision: Right 6/9, left 6/5. Oct. 5th: Right swelling only 2 D., disc distinctly clearer; vision 6/12. Left eye showed much more swelling, elevation 6 D., vision 6/36. No exudate seen. The eye conditions were not sufficient to determine the primary disorder. Oct. 12th: Neuritis beginning to subside. Right swelling 2 to 3 D., vision 6/9. Left swelling 5 D.; vision 6/18 slowly. Oct. 19th: Right swelling 2 D.; vision 6/9. There was now exudate in the macular region, distributed in a roughly radiate fashion. Left swelling 3 D., suspicion of commencing exudate in the macular region; vision 6/60. Oct. 26th: Right unchanged. Left slightly less swollen; vision 6/24. Nov. 2nd: Right swelling under 2 D., disc a fair colour; vision 6 5. Left swelling 2 D., disc looked like becoming atrophic; vision 6/36. Nov. 9th: Right swelling diminishing, vessels of new formation clearer; vision 6/6. Left disc whitening, shrinking of inflammatory deposit on the disc; some small fresh spots of exudate between the disc and macula, like those seen on Sept. 21st; vision 6/18 attempts. Nov. 16th: The swelling in each eye disc was 1 D. or less. The right disc had a fair colour, but was ragged, vessels of a good contour; vision 6/6. Left disc white and ragged; vision 6/24. The eyes presented throughout the signs of a pure neuritis. The fluctuation in the degree of swelling, and the changes in the fundus generally, gave no clue to its origin. On no occasion had there been any tenderness on pressure or photophobia.

Dr. CAUTLEY showed a case of Friedreich's Disease in a boy, aged 10 years, the seventh of nine living children, two sisters being younger than the patient. Three children are dead. Four years ago he fell about 6 ft. and injured his head. His gait was said to have been affected a month later. He was intelligent and in Standard II. On admission to hospital his gait was somewhat ataxic and he walked with his legs wide apart. The knee-jerks were absent, and there was an extensor reflex of the big toes. There was very marked pes cavus, with some equinus. The grasp was stronger on the right side, and there were somewhat claw-like movements on prehension. There was no nystagmus and the fundi were normal. The boy was somewhat unsteady with the eyes shut. Wassermann's reaction was negative. He had improved in general health, and had gained weight and in control of his muscles since admission.

Mr. A. S. BLUNDELL BANKART showed a case of (?) Myositis in a girl aged 12 years. She first noticed swelling of the right thigh on July 12th, 1914, and said that it felt "tight" when she sat down. There was no history of any previous illness. Occasionally had "rheumatic" pains. Had been taking active part in games and training for school sports, but was not conscious of any strain or other injury. She had four brothers, aged 14, 10, 5, and 3 years respectively, all quite well. There was no history of paralysis or myopathy in her family. The patient was first seen on July 14th, 1914. The right thigh and calf were obviously larger than the left. The swelling was rather firm and (?) a little tender on deep pressure. No pain. Circumference of right thigh, 13⅜ in.; left thigh, 12 in.; right leg, 10½ in.; left leg, 9 in. Musculature of upper extremities and trunk rather poorly developed, but equal on two sides. No atrophy of the hand, arm, scapular muscles, or elsewhere. No weakness. All movements of the trunk and limbs performed normally. No lordosis or scoliosis. No nystagmus or strabismus. Reflexes normal. Electrical reactions normal. X ray of right thigh showed nothing abnormal. During the last 17 months the condition had remained unchanged. The right thigh and calf had increased in size, but not disproportionately. Also the swelling was a little softer than it was at first. There was no disability of any kind. The child still occasionally complained of "rheumatism" in the right thigh.

Dr. T. R. C. WHIPHAM showed a case of Congenital Word- and Letter-blindness—Alexia Congenita. The patient was a physically well-developed girl, aged 8 years. In appearance she was not unintelligent, but her manner was shy and reserved, and she was not inclined to associate with other children. She was of a placid disposition and showed no signs of nervousness, and, except for a certain degree of mental impairment, she appeared to be perfectly normal. She went to school two years ago, and she was now only in the class above the infants, her defective powers having always been commented upon by her teachers. She could not say the alphabet, but could write it perfectly on rare occasions, though generally she stopped about E or F and then went wrong. She could not write a given letter except occasionally A, and could only at times pick out one or two letters from copies or from what she had herself written. She could count up to 20, but had no knowledge of numbers above that. She could write the numerals up to 12, but frequently missed one out and usually stopped at 9. Occasionally she could write a given numeral and pick one out, and was most likely to succeed with the first four. She had no knowledge of Roman numerals. She could not spell words of even two letters, and could not read easy words either from print or writing. She could not write from dictation simple words with certainty. She could copy correctly anything that was written for her, even unknown letters like Greek. Printed words were generally transcribed in printing characters, but occasionally she copied them in her ordinary handwriting, though quite unaware of their meaning. She could copy accurately simple free-hand drawings, and draw a cross and a square when asked to do so, but she did not know a triangle. Attempts to copy black-and-white illustrations, and even outline drawings, were very feeble, but crude efforts were made at drawing out of her head objects such as an engine, and she could name the component parts, such as the wheels and funnel. She could interpret illustrations fairly well, but did not know an elephant, a donkey, or a goat. On the other hand, when shown a picture of a Chinese woman, she was nearly right in describing it as a Japanese girl. With the exception of alexia and letter-deafness the child's mental condition presented no other defect. There was no word-deafness; she understood what was said to her, and her vocabulary

was fairly extensive for a child of her age and disabilities, and she could repeat "pieces" which she had learnt by heart. There was thus no verbal amnesia or motor aphasia. She could name ordinary objects and specify their uses, and was so far observant that, when shown a broken toy watch and asked if there was anything peculiar about it, she said what it was and remarked that it had lost its hands. She knew the use of a watch, but could not read the time. Her sight was good, and there was no hemianopia. There was no nystagmus or intention tremor, and all the reflexes were normal. The Wassermann reaction was positive.

Mr. SYDNEY STEPHENSON showed a case of (?) Juvenile Tabes in a boy aged 9 years, first seen on August 24th last. His sight had been noticed to fail during the last month. The father, when aged 37 years, developed fits, and had had two such "fits" during the past 12 months. The mother enjoyed good health. Two miscarriages; six children born at term, five of whom were still alive. The patient was the second in the family. On admission the pupils were equal and active to light. Right vision 3/60 and No. 16 J.; left vision <1/60 and <No 20 J. Both optic discs were pale, but without signs of past neuritis. The retinal vessels were of fair size. No changes in gait. Intelligence quick. No history of pains in the legs or arms or of sphincter trouble. No loss of sensibility in lower limbs or about face. The knee-jerks could not be elicited, even on re-enforcement. No clonus, Babinski's or Romberg's signs. No personal evidence of syphilis; Wassermann reaction negative. Treatment and progress: Potassium iodide 5 gr. twice a day. Two weeks later: right vision 5/36 and No. 12 J.; left vision <1/60 and <No. 20 J. The iodide was increased on Sept. 7th to three doses a day and later (Oct. 11th) to four doses a day. When examined on Oct. 12th last the condition was as follows: Pupils 3·5 mm. Both reacted to light, but the right better than the left, and the contraction of the former was much better maintained. Right vision 6/60 and letters of No. 6 J.; left vision <1/60 and letters of No. 20 J. The retinal vessels appeared to be shrinking. The pallor of the optic discs remained apparently without alteration.

Dr. E. G. FEARNSIDES showed: 1. A case of General Tremor and Left Cortico-spinal Interference: Lesion of the Mesencephalon. The patient was a fairly well developed child, aged 4¾ years. There were no abnormal signs in the heart, lungs, abdomen, or urine. The temperature and the rate of the pulse had been normal throughout. With every attempt at movement a dynamic tremor of the head, trunk, and upper extremities occurred; this was greater in the left upper extremity than elsewhere. Muscular tone was not grossly affected, and there was no muscular wasting. Ocular movements were normal and nystagmus was not present. The pupils reacted normally. The face was somewhat asymmetrical in movement, and there appeared to be some slight right facial weakness. The tongue, on protrusion, came out straight. The ocular fundi appeared normal. Hearing was not affected and there was no otorrhœa. The knee-jerks were obtained, ankle-clonus was not present, and the plantar response on the right side was flexor, on the left indefinitely extensor. The abdominal reflexes were obtained. The sphincters were relaxed incontinently. The hands and feet were always cold, blue, and tended to be sodden. The patient was intelligent but irritable, and cried when approached. Speech was somewhat jerky and explosive. Under observation she had improved considerably. 2. A case of Anterior Poliomyelitis affecting the Distal Portion of the Left Upper Extremity. The patient was a girl aged 8 years. At the age of 9 months she suffered from an acute illness which affected the left upper extremity. At the present time she showed a general regression and atrophy of this limb affecting chiefly the muscles supplied by the eighth cervical and first thoracic spinal segments. Movements at the left elbow were paretic, and the joint itself could not be fully straightened. The left wrist was flail-like and the fingers of the left hand were unaligned. All the small muscles of the left hand were poorly developed. The muscles on the flexor surface of the left forearm were better developed on the outer than on the inner side and than those of the extensor surface. The knee-jerks and ankle-jerks were unaffected, and both plantar reflexes gave a flexor response. The abdominal reflexes were normal. There was no scoliosis.

Dr. LEONARD GUTHRIE showed a case of Polio-encephalomyelitis. The patient, a girl aged 5 years, was taken ill in March, 1914, with sore-throat, which lasted three days, and was followed on the fourth day by measles. The sore-throat was attributed to diphtheria, but this diagnosis was doubtful. Ten days later she became unconscious without any convulsions, and sweated profusely. For three weeks she did not speak, and the only sign of consciousness shown was that her eyes would follow a lighted match. She then gradually came round, and six weeks after the commencement of the illness she attempted to speak, but could only say "Dad" and "Mum." Previously she had spoken fluently. The voice was not nasal and there was no regurgitation through the nose. At the same time her eyes became "turned," and when she tried to sit up she "flopped." Gradual improvement occurred, and by November, 1914, she could stand when supported, and could walk about the room holding on to chairs. She could now say any words and express herself distinctly, but speech was slow and drawling. Since November, 1914, she had made but little progress. Condition on admission (Nov. 1st, 1915): A well-nourished child. The face lacked expression, but intelligence was not defective. Eyes: There was marked internal strabismus of the right eye. The left eye was also at times diverted strongly inwards. Pupils were equal, reaction, discs, and fundi were normal. No paralysis of other cranial muscles, but slight weakness of the lower left face. Speech was slow and hesitant, but articulation was clear. She was mostly taciturn, but at times talked volubly and to the point. Upper extremities: Some quasi-voluntary "pawing" movements were noticeable in the right arm, and also at times there were coarse involuntary tremors on both sides, but voluntary movements were fairly well coördinated. The muscles were not wasted or weakened. A slight degree of hypotonia was present in the fingers and wrist. There was no rigidity, and the arm-jerks were not exaggerated. The involuntary movements had decreased considerably since admission to hospital. Lower extremities: Wasting and rigidity were absent, and also hypotonia. Knee-jerks were absent on both sides. Ankle-clonus was absent. Plantar response was extensor (Babinski type). Equilibrium: She could stand alone, but swayed slightly in all directions, though chiefly backwards after a few moments. Gait was halting and unsteady, and the right leg was often abducted at the hip in order to secure a wider basis. She could not walk alone for more than a few steps without swaying backwards or from side to side, and would frequently fall if not supported.

Dr. J. D. ROLLESTON showed a specimen of a Single Pelvic Kidney from a mentally defective boy, aged 14 years, who died from septic scarlet fever on the eleventh day of the disease. There was a trace of albumin in the urine during the nine days that he was in hospital, but there were no other renal symptoms. Post mortem no kidneys were found in the usual situation, but on the right side and within the brim of the pelvis was a single kidney, lying in apposition to the posterior wall of the bladder. Its shape was irregular and by no means reniform. The surface was lobulated. The organ measured 3¼ in. long by 1¾ in. broad at its upper part and 2⅜ in. in its lower part, and 1 in. thick. The weight was 4 oz. The hilus was situated anteriorly, and from it issued a single ureter, considerably dilated and hypertrophied, which measured 7½ in. long, ½ in. broad close to the kidney, and 1 in. broad at its widest part 1¼ in. above the bladder. At the lower end it became narrow again and the lumen of the vesical end barely admitted a pin's head. No trace of a left kidney or ureter could be found. There was no malformation of the genital organs or other obvious abnormality.

Dr. CAUTLEY showed a specimen of Polydactyly and Deformity of the Right Leg from a girl, aged 6 months, who weighed only 6½ lb. three days before death from zymotic enteritis. She was the fifth child, and her mother had had one miscarrage. There was no family history of deformity. The right foot and leg showed the following conditions: The leg was shortened and curved and the foot had seven toes. On the inner side of the great toe were two toes, identical in appearance with normal second and third toes. The second and third toes were closely united, almost to the proximal end of the terminal phalanges. Similarly, the skiagram showed metatarsals and phalanges of the extra toes practically identical with those of the normal second

and third toes. There was no fibula, and the tibia was very much curved. The left foot closely resembled the right in appearance, presenting similar extra toes but united up to about the middle of the second phalanges. The normal second and third toes were also united for about the same extent.

Dr. E. C. WILLIAMS showed a specimen of Congenital Hydronephrosis. Both ureters were the size of the small intestine and the bladder was hypertrophied. The patient, a male aged 6 months, had been sent to hospital as a case for operation. On admission there was marked intestinal peristalsis, the ureters could be felt on either side, and that on the right side resembled an intussusception. There was almost complete suppression of urine. There was no demonstrable fold in the urethra to cause obstruction.

Dr. C. O. HAWTHORNE showed specimens from a case of Congenital Syphilis. The patient was a boy aged 1 year and 7 months. He had been in good health till July, 1915, when he had a "stroke" affecting the left side. On admission to hospital in November, 1915, he had no physical signs beyond considerable enlargement of the liver, and with this anæmia (Hb. 50 per cent.; red cells, 3,240,000; white cells, 19,600, with relative excess of lymphocytes) and a positive Wassermann test. There was considerable cystic formation in the lower right parietal cortex extending deeply. There was also evidence of disease in the liver, kidneys, and lungs, and an adherent thrombus in the left ventricle.

HARVEIAN SOCIETY OF LONDON.

Organisation of the Medical Profession for War Service.

A MEETING of this society was held on Nov. 26th, Dr. G. DE B. TURTLE, acting President, being in the chair.

A discussion on the Organisation of the Medical Profession for War Service was opened by Major J. GALLOWAY, R.A.M.C (T.), and Dr. C. BUTTAR.

Major GALLOWAY gave a short sketch of the history of the formation of the Central Medical War Committee, a body including representatives of the Colleges of Physicians and Surgeons, of the Universities of England and Scotland, together with the principal medical governing bodies of Ireland, which, acting through the branches and divisions of the British Medical Association, had been able to get in touch with almost the whole of the membership of the medical profession throughout the country, and had thereby been able to furnish a register of the profession on lines analogous to that which the Government had made of the civil population. Recognising the value of the work that had been done, the Director-General of the Royal Army Medical Corps, and subsequently Lord Derby, had practically handed over the whole work of the recruiting for the Army Medical Service to this Central Medical War Committee, that through it alone the canvassing for the various quotas required should take place. Major Galloway exhorted all members of the profession who were of military age and physically fit to offer themselves for service in the Royal Army Medical Corps.

Dr. BUTTAR, in the course of his paper, pointed out that though some of the members of the medical profession who gave up their civil work for military duties suffered considerable hardship, their lot was not so bad as that of members of some other professions, such as lawyers and stockbrokers. After emphasising the duty of observing with the utmost strictness the ethics of the profession by those who were looking after the practices of members on service, Dr. Buttar proceeded to show the varying degrees of ease which the Central Medical War Committee recognised for men being able to be spared from the profession to take their place in the Royal Army Medical Corps: single men before married; young rather than old; those holding appointments next; panel practitioners before purely private practitioners; men with partners before those single-handed; and men in districts thickly populated by doctors before the sparsely scattered. Also tuberculosis officers, he thought, might be spared to a large extent.

Dr. W. COLLIER (Oxford) drew attention to the over-staffing, in his opinion, of the general hospitals on the medical side, and thought that if more economy were exercised in disposing of the medical men already serving in the Royal Army Medical Corps, they would find that there was much less need to call up many more.

Dr. H. G. G. COOK (Cardiff) and Dr. S. MELVILLE also spoke with regard to over-staffing both at home and abroad.

After Dr. TURTLE had made a few remarks expressing the loyalty and readiness of the members of the society as a whole,

Major GALLOWAY replied to the questions raised in the course of the discussion, particularly referring to the alleged over-staffing, which he said was more apparent than real, and pointed to the necessity of having an adequate reserve against all emergencies.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Exhibition of Specimen.—Method of Recording Radium Dosage.—Surgical Cases.

A MEETING of this section was held on Nov. 5th, Mr. H. STOKES being in the chair.

Mr. H. STOKES exhibited five feet of Small Intestine removed for Impending Gangrene. The patient presented symptoms of acute intestinal obstruction. On opening the abdomen the intestine was found almost gangrenous. This condition terminated sharply above and below the affected portion. There was no thrombosis of the mesenteric vessels, and no adhesions to account for the condition. A bacteriological examination of the portion removed was sterile and the cause of the trouble remains obscure. The patient recovered and seemed none the worse for the loss of five feet of intestine.

Captain WALTER C. STEVENSON read a paper on the Recording of Radium Dosage, illustrated by a series of 11 cases, treated by one set of emanation capillaries in needles. The series was also an example of the economy of the therapeutic agent by this technique in treatment. He pointed out that the total amount of ionisation or dose depended on two main factors, the quantity of radiating material and the length of exposure, and that the effect on the tissues was influenced by the relative value of the factors as well as by the total amount of ionisation obtained by multiplying these factors together. He deprecated the practice of speaking of radium and emanation in terms of one or other radium salt. By adopting the radium element standard a milligramme of radium and a millicurie of emanation indicate the same quantity. He proposed the radium dose be recorded in detail, and without circumlocution as an equation on one side of which is the quantity factor multiplied by the time factor, and on the other the result or total amount of ionisation designated milligramme, or millicurie, hours. The factor for the quantity of emanation—an average—is calculated from a table, and is the amount present when half of the exposure is over. The 11 patients treated had inoperable malignant tumours. Nine capillaries were used for ten days, till their total activity was reduced from 37·7 to 6·2 millicuries. Fine needles containing the capillaries were inserted into the following regions: orbit, antrum of Highmore, naso-pharynx, through the soft palate, cheek, anterior part and root of tongue, palate, fauces, epiglottis, vagina, rectum, and glands in neck and groin. Three cases were exhibited in illustration of the points.

Mr. W. I. DE C. WHEELER gave a short account of four surgical cases of unusual interest, one being that of an officer wounded at Loos. In this patient a bullet had entered at the outer side of the calf, pierced the interosseous membrane, and found exit at a point below the inner tuberosity of the tibia. The patient had severe hæmorrhage at the time of the wound, and three weeks afterwards developed a diffuse traumatic aneurysm, involving the upper two-thirds of the leg. There was diffuse swelling and pulsation on the inner side of the calf, and leakage of blood from the inner wound. It was impossible to tell whether it was the anterior or posterior tibial artery which was bleeding. The posterior tibial artery could not be tied, unless through the popliteal space, and the Matas operation was out of the question because there was no properly formed sac. The popliteal artery was therefore ligatured in the lower third of the thigh, and collateral circulation was well established the same day. An artery the size of the radial was pulsating at the inner side of the knee-joint four days after the ligature of the vessel.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held at the West London Hospital on Dec. 3rd, Dr. Leonard Dobson, the President, being in the chair.—Dr. T. Grainger Stewart and Mr. H. S. Souttar opened a discussion on fibrositis from the medical and surgical aspects respectively.—Dr. Grainger Stewart said that they were met to discuss Fibrositis more especially with reference to its occurrence subsequent to injuries received and diseases contracted in war. On the purely medical side, quite apart from acute traumatism, a large number of soldiers had been invalided with subacute and chronic rheumatism, both articular and muscular. Most of those cases occurred in middle-aged men or in those who had previously been the victims of chronic rheumatism, and there was nothing special to discuss in regard to them. As regards the wounded, it appeared to him that the occurrence of fibrositis was more frequent and the degree more severe than in cases of injury received in civil life. He had been struck by the rapidity with which adhesions formed not only around and in the joints, but also in the tendon sheaths and muscular structures. He thought that several factors were present which might account for the rapidity with which those adhesions formed: (1) Possibility of infection from wounds; (2) the effects of chill, strain, or exposure; (3) the protective strain on the muscles guarding the injured part; (4) the complete cessation of functional activity in the wounded limb as the result of its being bound up in splints, and the impossibility of carrying out passive movements and massage of those parts of the limb not directly involved by the injury. He mentioned this particularly because, in his opinion, early passive movement and massage would do much to prevent the formation of adhesions, would speed the recovery of the slightly wounded, and would prevent many of the more severely wounded who would not be fit for further service in the army from becoming economically a burden to the State in after years, by keeping the joints supple and the muscles in good condition until the patient had recovered from the primary injury, whether it involved injury to the bone or to the nerves. Personally, he regarded immobility as the chief cause of those fibrous adhesions, and, that being so, it was of prime importance to insist on the daily movement of the joints of the affected limb as far as that was compatible with the surgical necessities of the case.—Mr. Souttar referred to the surgical aspects of the question, his main contention being that many of the after-effects of injuries and diseases incidental to war that might be classed under the heading of fibrositis were preventable, and that, applying the lessons of recent researches in the treatment of fractures, it was of the first importance to avoid anything in the way of too prolonged or too complete immobility of the affected parts.—The President, Dr. H. J. Broughton, Mr. Rickard W. Lloyd, Mr. F. G. Lloyd, Dr. D. Jobson Scott, and Dr. S. D. Clippingdale took part in the discussion which followed, and Dr. Grainger Stewart and Mr. Souttar replied.

LONDON DERMATOLOGICAL SOCIETY.—A meeting of this society was held on Nov. 16th, Dr. J. L. Bunch, the President, being in the chair.—The President showed the following cases: 1. Rodent Ulcer in a man aged 60, which had been present on the left ala nasi for 20 years. The lesion had a well-defined edge, though not so rolled as in some cases. The patient had never been under treatment. The lesion being superficial was treated by the most satisfactory method—namely, an application of solid CO_2. 2. Tertiary Syphilis. The lesions were of an ulcerative type and were present on the forehead and the bridge of the nose.—Dr W. Knowsley Sibley showed: 1. A man aged 75, who in September of this year had a large Cauliflower Growth on the Lip. A section had been taken, and it proved the growth to be an epithelioma. On Oct. 6th the patient had one exposure to the X rays, and the mass had since entirely disappeared. 2. A typical case of Angiokeratoma in a girl aged 12. She had a series of small dilated nævi present on the toes which were going on to a warty condition. A section showed a typical cavernous space in the stratum mucosum which was filled with red blood cells.—Dr. Morgan Dockrell showed a case of Westenbury's Morphœa Guttata in a man aged 23. The white patches were present on the abdomen, the back, and the legs, and had a typical areola.—Major E. G. Ffrench, R.A.M.C., showed: 1. A man who had contracted Syphilis five years previously. Nine months ago a patch had appeared on the buttock which showed induration and crusting. The patient had been treated by injections of galyl and had had seven exposures of two minutes' duration to the Simpson rays. These kinds of lesions healed much more readily after the rays. 2. A man with a Granulomatous Ulcer on the Lower Lip and the Scalp. He attributed the lesions to scratching. It was a question as to whether the case was one of yaws.—Lieutenant C. H. Mills gave the differential points between syphilis and yaws, and came to the conclusion that the bulk of the condition was impetigo and that the ulcerated lesion was of a purely syphilitic nature.—Dr. H. W. Barber read a paper entitled "Intestinal Toxæmia in Relation to Certain Diseases of the Skin," the discussion being adjourned to a later meeting.

HUNTERIAN SOCIETY.—A clinical afternoon meeting was held at the National Hospital for Diseases of the Heart, Westmoreland-street, W., on Nov. 24th, when the plans of the hospital, which was rebuilt in 1914, were explained by Mr. R. G. Whitney, the secretary, and opportunity was given to the Fellows to visit the wards and the out-patient and electro-cardiographic departments. The following cases were shown by members of the hospital staff:—Dr. C. C. Gibbes: Various cases of Heart Disease in which there were murmurs of differing tone and pitch.—Dr. R. O. Moon: Cases of Aortic Stenosis.—Dr. S. Russell Wells: Duroziez's Murmur in Cases of Aortic Regurgitation. This, he said, was a systolic and diastolic murmur elicited by pressing the stethoscope over the femoral artery, and was a very useful diagnostic sign of the condition of the heart.—Dr. P. Hamill: Three cases of Dextrocardia.—Dr. J. Strickland Goodall: Cases of Bundle Lesions.—Dr. Hamill also demonstrated the working of the electro-cardiograph, and Dr. Goodall explained the interpretation of electro-cardiograms.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Dec. 2nd, Dr R. J. Ryle being in the chair.—Dr. Walter Broadbent showed a case of Acromegaly, which was discussed by Dr. Ryle and Dr. Edmund Hobhouse.—Dr. Ryle showed a specimen of a Ruptured Aneurysm of the Left Posterior Communicating Artery of the Brain, which caused sudden death.—The specimen was discussed by Dr. Broadbent.—Dr. Helen Boyle gave a lecture, illustrated by lantern slides, on "Three Months in Serbia," relating an account of her experiences when attached to Mr. James Berry's hospital in the summer of 1915. She also showed various objects of interest which she had collected in Serbia.—A vote of thanks to Dr. Boyle was proposed by Dr. Hobhouse and seconded by Mr. H. H. Taylor.

THE "MILITARY SURGEON."—The issue of this journal for November mentions that Surgeon-General Rupert Blue, of the United States Public Health Service, has had conferred upon him the "American Medicine" gold medal, given to the American physician who has done the best work during the year. He has also been elected President of the Association of Military Surgeons and President of the American Medical Association. Dr. Blue, born in North Carolina in 1868 graduated at Baltimore in 1892 and forthwith joined the Public Health Service, where he has dealt in many fields with plague, cholera, yellow fever, and malaria. He studied in the London School of Tropical Medicine in 1910, and was appointed Surgeon-General of his service in January, 1912, at the age of 44 and after only 20 years' service—a striking proof of ability and tact. There is also mentioned, in the issue from which we quote, the resignation of a well-known research worker, Surgeon John F. Anderson, chief of the Hygienic Laboratory of the Public Health Service in Washington, D.C., who, it is stated, leaves the service to join a commercial firm. It will be remembered that on March 13th we noted certain lines of work that were being done by doctors for manufacturers in the United States—e.g., research on sterilising by X rays the ova of beetles in tobacco and cereals. It is to be regretted that governments cannot pay their distinguished servants salaries equal to those offered by commercial organisations.

Reviews and Notices of Books.

The Ductless Glandular Diseases.

By WILHELM FALTA. Translated and edited by MILTON K. MEYERS, M.D. Philadelphia: P. Blakiston's Son and Co. Pp. 673. Price $7 net.

AMONG the numerous works which have appeared during the last few years on the subject of the diseases of the ductless glands, Falta's volume on the more strictly clinical aspect of the question holds the foremost place. It, therefore, deserved to be translated, and in its English edition should increase its usefulness and popularity. The American editor has added to each chapter some consideration of the English and American work on the subject, which has either appeared since the original publication or has been overlooked by Falta in spite of his widespread research; so that the volume in its present shape may fairly claim to be the last word on the clinical features of the group of diseases with which it deals. It is introduced by a brief foreword written by Dr. Garrod, who in suggestive phrases sketches the prospects opened before us by the knowledge which has accumulated in recent years of the functions, and of the disorders, of the endocrine glands.

Falta's treatise opens with a chapter reviewing the outlines of the subject and defining his own attitude on the more controversial points: a chapter which is in some respects the most interesting in the book. He shows clearly how as our knowledge has progressed the influence of the ductless glandular system has proved to be far wider and more penetrating than any of the earlier investigators suspected; how it controls growth and metabolism, and, in short, determines largely the nature of that factor in the life of the individual, or indeed of the race, which the older physicians spoke of as "constitution." "We can divide," says Falta, "individuals into those with *stabile*, those with *debile*, and those with *labile* vegetative nervous systems, and individuals with *stabile*, *debile*, and *labile* ductless glandular systems." ..... "To me the most interesting are the ductless glandular *labile* individuals. These are individuals who several times in the month show extraordinary variations in the body-weight, or those in whom the thyroid swelling that occurs normally during pregnancy leads to slight manifestations of Basedow's disease, or those in whom a strong emotional excitement calls forth temporary glycosuria, or perhaps those in whom slight symptoms of acromegaly occur during pregnancy; or women in whom exist marked dysmenorrhœic distresses. In this group are always to be found, too, some symptoms that point to an especial *lability* of the vegetative nervous system."

The chapters which follow deal in detail with the symptoms and course of the diseases of the thyroid gland, of the parathyroid glands, of the thymus, the hypophysis, the epiphysis, the suprarenals, and the sexual glands. Status lymphaticus, pluriglandular disease, infantilism and dwarfism, the pancreas and its relation to diabetes mellitus, are considered in other sections, and the final chapter reviews the different forms of obesity and the curious phenomenon of adipositas dolorosa. On all of these themes the physician will find observations and comments on the more purely clinical aspect of the disease under discussion which bear the stamp of insight and wide outlook characteristic of the skilled clinician. But, as Dr. Garrod points out, it is Falta's knowledge and experience in the chemistry of metabolism which so especially illuminate the clinical problems. It is safe to say that no one, however familiar he may be with the diseases in question, can rise from a perusal of this volume without having received new light upon the problems.

We wish we could honestly praise the merits of the translation. The editor set before himself the ideal of a faithful rendering of the German text: and he has been too successful. Sentence after sentence bears upon it the stamp of the language in which it was originally written, so rendered that sometimes, without the knowledge of the original text, it is very difficult to guess the author's meaning; indeed it appears to us probable that Dr. Meyers is much more familiar with German than with English. At the same time so faithful a translation has the very great merit of giving us the author's views undiluted, and not merely the interpretation of the translator, and in the notoriously difficult task of putting before the reader the finer shades of meaning of foreign words it is better to err on the side of a strict fidelity than of an easy laxity; the ensuing enforced carefulness in the reader probably adds to the value of the reading. The illustrations, of which there are a goodly array, are admirably reproduced; and the printing and style of the volume leave nothing to be desired. It is, in conclusion, certain that there is no book in the English language which covers the same ground with equal thoroughness, and we look forward to a second impression with these slight blemishes removed.

LIBRARY TABLE.

Qualitative and Volumetric Analysis. By W. M. HOOTON, M.A. Oxon., M.Sc., F.I.C., Chief Chemistry Master at Repton School. London: Edward Arnold. 1915. Pp. 86. Price 3s. net.—This book reflects possibly part of a scheme of chemical training adopted at Repton School. The reactions are presented in the light of the ionic theory. There are two parts, the first being devoted to qualitative analysis and the second to volumetric analysis. The analytical directions are given in plain and simple terms to those who have been trained in elementary principles. The treatment of the subject, though quite limited in scope, affords a useful preparatory course to more advanced matters.

Refuse Disposal: A Practical Manual for Municipal Engineers, Members of Local Authorities, &c. By ERNEST R. MATTHEWS, Assoc.M.Inst.C.E., Mem.Inst.M. & C.E., F.R.San.I., F.R.S.E.. With 8 detailed drawings and 91 illustrations in the text. London: Charles Griffin and Co., Limited. 1915. Pp. 160. Price 6s. net.—The question of refuse disposal brings with it many troubles, but there can be little doubt that the only satisfactory way from the hygienic point of view of getting rid of the threatened nuisance is destruction by heat. Professor Matthews's book is practically devoted to the description of various types of destructors, and his views about the adaptability of these according to the requirements of various localities are of interest. At first the destructor was not a satisfactory machine. Its shaft gave off offensive smells and scattered dust for a great distance, so that the destructor became a source of considerable nuisance. But, as Professor Matthews says, during recent years many improvements have been effected. Steam, for example, is now raised from

the burning of the refuse itself, while a dust-catching apparatus and forced draught are features of the modern destructor. The author's observations on the selection of a site and on installations for villages are particularly valuable. Professor Matthews's book is most instructive, and should be of considerable assistance to our municipal and local authorities. It is well and freely illustrated.

JOURNALS.

The Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., F.R.S., Vol. L., No. 1. Cambridge University Press. October, 1915. Pp. 1–64. Price 4*s.*—The Significance of the Pericardium, by Yas Kuno. It is generally assumed that the function of the pericardium is to prevent over-distension of the heart. Barnard, in 1898, showed that the pericardium is inextensible and that it can bear a pressure of 1½ to 1¾ atmospheres, whereas the heart ruptures at a pressure of ¾ to 1 atmosphere. The author's experiments throw a vivid light on the physiological importance of this membrane. He discusses in the light of experiments the influence of opening the pericardium on the arterial and venous pressure and on the output of the left ventricle. Nearly all the experiments were carried out on the heart-lung preparations on dogs. We have only space to cite some of the more important results. 1. Opening the pericardium causes a fall of venous pressure, a rise of arterial pressure, and an increase of output, the extent varying with the condition of the heart and being dependent on the volume of the heart. 2. The maximal performance of the heart as measured by the output of the left ventricle varies according as the pericardium is opened or closed. 2. As the arterial pressure is raised the heart in its normal state fails to drive out the blood it receives much sooner than when the pericardium is opened. 4. The pulmonary artery pressure rises on opening the pericardium so long as the venous inflow is moderate. 5. The influence of the pericardium is much more marked with a slowly than with a rapidly beating heart. 6. If into a heart without a pericardium there is a large venous inflow, or if the heart has to beat against a high arterial pressure, hæmorrhages occur in the heart wall and often valvular insufficiency. In the absence of the pericardium it is difficult to increase the work of the heart above its normal level without danger to the organ. The existence of the pericardium is necessary for the unimpaired working of the heart in normal life.—On the Contractile Movement of the Gall-bladder, by Seizaburo Okada. The author's object was to study the movements of this organ during normal digestion, for which purpose two dogs with a permanent gall-bladder fistula—the common bile-duct not being touched—were employed. There is already a considerable amount of literature on this subject. Rhythmical contractions occurred two to five times per minute—though they may not occur. They are influenced by the degree of distension of the gall-bladder—a suitable pressure is 15–30 cm. water. After a meal of meat there is a great increase in the rhythmic contractions at the height of digestion with a variable rhythm. From these and some other facts cited by him the author concludes that during digestion, besides an increase of bile, there is also an increase in the force of the rhythmic contractions of the gall-bladder.—Interest as a Factor in Antagonism and Simultaneous Contrast, by H Hartridge.—A Method of Bringing a Small Quantity of Blood into Equilibrium with a Given Gas, "Microaerotonometer," by Toyojiro Kato. These interesting papers do not readily lend themselves to résumé in the space at our disposal.

Quarterly Journal of Experimental Physiology. Editors: E. A. SCHÄFER, W. D. HALLIBURTON, C. S. SHERRINGTON, E H. STARLING, and A. D. WALLER. Vol. IX., No. 2. London: Charles Griffin and Co., Limited. 1915 Pp. 101–198 Price 7*s.* 6*d.*—Dr. Graham Brown publishes a continuation of his elaborate researches. "Studies in the Physiology of the Nervous System" They are: XXIII., On the Phenomena of Facilitation. 2. Its occurrence in response to subliminal cortical stimuli in monkeys. After describing his experiments, the author gives his conclusions which occupy seven pages. XXIV., On the Occurrence of Facilitation. 3. "Secondary Facilitation" and its location in the cortical mechanism itself in monkeys. The conclusions occupy about two and a third pages of the original text. XXV., On the Phenomena of Facilitation. 4. Its occurrence in the subcortical mechanism by the activation of which motor effects are produced on artificial stimulation of the "motor" cortex. The author's conclusions extend to nearly three pages. All the papers are illustrated by many tracings, some as elaborate plates.—Some Observations on the Bucco-Pharyngeal Stage of Reflex Deglutition in the Cat, by F. R. Miller and C. S. Sherrington (20 figures in the text). The method employed to expose the parts concerned is first described, and how a decerebrate reflex preparation is obtained. The act of deglutition may be separated conveniently for descriptive purposes into two stages, a bucco-pharyngeal and an œsophageal. The whole act is a closely integrated one, but its component parts are in some measure separable. The authors find: 1. That localised moderate pressure on points in certain areas along the back wall and slope of the roof of the pharynx evoked the swallow readily, and less readily similar pressure on the soft palate, epiglottis, and hyo-epiglottidean part of the dorsum of the tongue. 2. Water and watery fluid, even 0·1 c.c., over the extreme posterior part of the tongue evoked deglutition with readiness and regularity. A large dose acted more quickly than a small one. Dilute alcohol was the most phagetic agent met with. Glycerine evoked the reflex markedly. Oils—such as olive oil, cod-liver oil, and castor oil—were practically aphagetic—i.e., they excited swallowing very poorly. A mixture of castor oil and ethyl alcohol excited swallowing readily and powerfully. 3. Noxious fluids and fluids distasteful to the normal cat evoked the swallow in the purely reflex animal; after some repetitions, they induced reflex rejection, retching, &c., in place of swallowing. 4. Solid bodies—e g., pieces of meat—were much less effective as stimuli than water. 5. Excision of the whole soft palate did not render ineffective or obviously impair the swallowing of a dose of fluid, even when the preparation was inverted—i.e., supine. 6. Faradisation of the lingual nerve and of the afferent filaments of nervus intermedius (chorda tympani) inhibited the bucco-pharyngeal swallow, either prolonging the latency of the latter or suppressing it temporarily altogether. The inhibition was not powerful or long-lasting. 7. Weak stigmatic unipolar faradisation of the fovea inferior of the floor of the fourth ventricle excited swallowing readily and regularly. At the same time there was arrest of respiratory movement of the larynx and chest and a change of pulse-rate as in normal swallowing. The "preparation" was also used for obtaining graphic records.—On the Inhibitory Action of the Peripheral Neurones in the Heart of the Frog, by the late Lieutenant T. A Letters. It is well known that the peripheral ganglia of the heart are developed by an emigration of neuroblasts from the central nervous system in the same way as the myenteric plexus is developed. Some migrate *viâ* the vagus, others along the course of the thoracic sympathetic. The question sought to be solved was, Do the intrinsic neurones of the heart play a part in regulating the action of the organ apart from the influence of the vagus? The author finds that a sudden rise of intraventricular pressure in the frog, produced by clamping the aorta, causes a temporary decrease in the rate of the heart if the peripheral neurones are not interfered with; but an acceleration when these neurones are paralysed by atropine. In the author's opinion this indicates that these neurones play a part in regulating cardiac action. The Death Temperature of Nerve, by W. D. Halliburton. The late N. H Alcock, taking the electrical response of a nerve as the "sign of life," found that the temperature at which this is extinguished in the frog is 40°–42°, in the mammal 48°–49°, and in the bird 53° C. The proteins of nerve—as in muscle—are numerous and coagulate at different temperatures. When the temperature of Ringer's fluid in which parts of frog's nerves are placed is rapidly raised, the heated protein of the nerve loses both its excitability and conductivity at the same moment; and this temperature is identical with that at which the first protein in the nerve passes into the condition of a heat coagulum—40°–41° C. Prolonged exposure to 36·5° C. causes the same result in an hour. The phenomenon, like heat-coagulation of a protein, is an irreversible phenomenon. Alcock's conclusion is justified.

THE LANCET.

LONDON: SATURDAY, DECEMBER 11, 1915.

The Supply of Medical Men for the Army.

THE signs of the times, as far as the great war is concerned, are easy to read in one direction: it is plain that the Allies, recognising the immensity and intensity of the struggle before them, each and all have embarked upon a closely joint policy which is intended at whatever cost to end the struggle in favour of the right. But such a policy must be founded on the reasonable apprehension that the war may be prolonged for many months, so that the demands for fighting men will continue, and may even be made with increased acuteness. These demands will in their turn maintain at its present pitch of urgency the call for medical officers with the Army; and, indeed, that call may grow more insistent. It is quite doubtful whether the figure mentioned some weeks back in these columns as the number of additional medical officers officially required by the new year will really be sufficient. That number was 2500, and it is certain that we have not yet obtained anything like that quantity of new military medical officers in the last two months, while it is probable that when they are obtained they will not be found to suffice. There is in our mind no doubt that more than the 2500 medical men at present demanded will be wanted, however carefully the large number at present with the colours is treated. We are making allowance for the somewhat wasteful use of material which is known to prevail in some places, for it would appear that there is no escape from the circumstances which bring about a local plethora. If it is a fact that in a certain district more doctors may for the moment be stationed than can conceivably be required; it is also a fact that at the briefest possible notice all of these may be ordered elsewhere, and may find themselves then in a position where there are still too few doctors. This is a matter where, it seems to us, we must trust persons in high authority, who are able to see the situation in bulk; and such persons continue to state that the demand for medical men in the army is great. Our own reading of events is that it will be greater.

But in the desire to keep up the supply of medical officers with the army the civilian needs must not be neglected, if only because no hard-and-fast line can possibly be drawn between the army itself and those whose work at home sustains that army as a healthy and capable fighting force. It is essential that the conditions in which those live who supply and transport the soldier should be very good, or the output and character of much essential work will deteriorate. Again, the claim of the parturient woman and the infant child to especial care needs hardly to be insisted upon at a time when a large portion of the male population is embarked upon grave risks and when social circumstances have led to a falling birth-rate. The number of times that these things have been said is only equalled by their obviousness, and yet they may be repeated because they are the things which show that those who are devoting particular attention to the recruiting of medical officers for the army have a delicate as well as a hard task before them. The army must be adequately supplied with doctors, but, on the other hand, the country must not be dangerously depleted. The country may have to go short that the army may be well supplied, but the distinctly economical principles on which our domestic lives are now being run will make this easier than would have been thought possible a year ago. But the toll of doctors taken from the country for the army must be evenly distributed, and this is a matter requiring a good deal of delicate management. It must be remembered, for example, that the National Health Insurance Committee has charge of the fulfilment of the contract which Parliament has entered into with insured persons to provide them with medical attendance, and that if by any chance the activity of the Central Medical War Committee should in any particular cases result in impairing the medical service of the panels a serious situation would ensue. How this can be avoided with certainty is not very easy to see, but we are glad to learn that the executive subcommittee of the Central Medical War Committee is conferring with the National Health Commissioners and with the Local Government Board on the matter.

The situation cannot be met by a simple rule-of-three sum. It is of no use to say that, assuming one doctor for every 2000 of the population to be a low proportion for normal times, an area with ten doctors and only 20,000 inhabitants should be able to spare one doctor or even two. The fallacy is obvious. If the area be within a crowded town, with every facility for transport and intercommunication within the town, it could spare not one or two but six or seven doctors—doubtless with inconvenience; on the other hand, if the area is rural and very large, because very thinly peopled, so far from sparing one doctor out of its ten, two more doctors might be needed to meet the civilian needs fully. Simple arithmetic is a guide so rough as to be misleading where the attempt is being made to withdraw doctors from civilian work to meet military needs. What is required is accurate knowledge of each locality, allowing the principles of selection to be influenced by the local conditions. It will be found that the result of taking a fair and safe toll in this way from the civilian medical men still remaining is a very

different thing from any selection on an arithmetical basis. But that the toll should be fair and safe requires great care and much detailed information. The Central Medical War Committee, by joint action with the Local Government Board and the National Health Commissioners, should be able to accomplish the difficult task, but it will mean anxious and elaborate work on all sides. The difficulties are fairly indicated in the letter which is now being addressed by the honorary secretaries of the Committee to the Local War Committees, the substance of which will be found in another column. Great self-sacrifice will be required from many medical men, and in some centres the loss of medical personnel and organisation will assuredly be felt; but the Central Medical War Committee has certainly taken the course which is best calculated to distribute the hardship fairly among their professional brethren, while obviating a dangerous withdrawal of medical assistance in particular areas.

Prevention of Trench-Foot (Local Frigorism).

SEVEN months ago, after reading in a despatch from Sir JOHN FRENCH that this new scourge of armies was disappearing with the advent of warmer weather, we reviewed the whole subject of trench-foot,[1] formulating a series of conclusions as to the measures necessary to prevent this condition from recurring, and expressing confidence that organised steps would be taken in time to prevent the recurrence among our troops of a malady which has deprived us of the service of many otherwise able fighting men, of whom, according to Mr. MAYO ROBSON, a very large percentage will be unable to return to the fighting line. We may recall, too, Sir BERKELEY MOYNIHAN'S statement that once established, no particular local treatment appears in any way to expedite a cure. Now with the arrival of the winter and of the specially severe weather of the last fortnight of November the thoughts of the medical profession and of the general public alike have turned to the subject with fresh interest, and inquiry is frequently reaching us as to what has been and is being done. Mr. TENNANT, in reply to a question in Parliament, was able to assure the House that careful and complete precautions based upon the advice of the medical and engineering professions had been taken, and that the clothing point of view had also been carefully considered.

In THE LANCET of Feb. 6th Professor SHERIDAN DELÉPINE published a preliminary note on important experimental work he had done on the subject, and full details were given later in the *Journal of the Royal Army Medical Corps* for May, 1915, of a series of elaborate experiments performed on himself to determine the rate of the cooling of the extremities on immersion in cold water, with or without the addition of a waterproof covering, and of the presence of a layer of dry air or damp air between the water-proof covering and the skin. In summarising his results he states that while the presence of a thick wool covering retards the loss of heat even when the covered part is plunged into water, this retardation is not sufficient to prevent the occurrence of local frigorism. On the other hand, a very thin layer of warm dry air between the skin and the cooling medium was sufficient to reduce the loss of heat to such an extent that the amount of heat brought to the part by the circulating blood then sufficed to compensate for the loss. A very thin waterproof covering used in combination with a woollen layer was found sufficient to secure a layer of warm dry air next to the skin. Other work was done under the guidance of the Medical Research Committee. Some months ago Professor J. LORRAIN SMITH with Professor J. RITCHIE and Dr. J. DAWSON recorded in our columns the results of clinical observations on soldiers as well as experiments on rabbits, which closely imitated the same physical conditions of production. They concluded that trench frost-bite was essentially similar to the stages of true frost-bite before actual necrosis had occurred. For prevention they enjoined careful attention to anything, such as boots and puttees, which might constrict the blood-vessels. Leggings were preferable to puttees in so far as they provided the protection of an ample cushion of air, and by draining more readily than compact wrappings, favoured the rapid re-establishment after wetting of this non-conducting air-cushion. As far, therefore, as the causation of trench-foot is concerned, there is substantial agreement both between the authors of these experimental tests and those familiar with the conditions in the trenches. It is the rapid conduction of heat away from the limb the coverings of which have become wet and sodden, associated with the constriction of the limb by tight boots and puttees, which interferes with the continuous supply of heat necessary to compensate for the loss. Professor DELÉPINE'S experiments were based upon the readings of a thermometer held in contact with the skin. He pointed out that it would also be possible to measure the actual quantity of heat lost in calories, and one of his experiments was designed to this end. Other similar experiments appear to show that the heat lost through exposure to cold water of the legs up to the knees may be as great as the total number of calories developed by the food in the course of 24 hours. Under normal conditions we have always supposed the diet of the soldier at the front to be abundant and even in excess of his physiological needs, but

[1] The proper name for this affection is still a matter of doubt. A name conveying some idea of the pathogenesis should be preferred, but *frost-bite* is inaccurate, as all experience goes to show that it is wet-cold which is the principal agent in its production. Mr. Jocelyn Swan confirms the opinion of all alpinists when he states that in the Alps *frost-bite* sets in with the thaw, and Mr. C. Max Page, with an experience also of the Balkan campaigns, speaks of *frost* as being present in only 10 per cent. of his cases. *Water-bite* has been suggested and is correct, but has an unfamiliar sound. The French expression in general use, *froidure*, has no obvious English translation. Professor Delépine suggests *frigorism* or *subcalorism*, further distinguished as *general* and *local*, adding that the terms are intelligible but would require the sanction of use. *Trench-foot* conveys no suggestion of cold, and is at best a descriptive makeshift. At present we see no alternative to its use, whilst adding *local frigorism* as a sub-title to this article.

if the soldier is using his entire food ration to warm the water of the trench in which he stands, he evidently has nothing over for his personal needs. He is then exactly in the position of a man from whom food is entirely withheld.

Granted, then, our knowledge of the conditions under which trench-foot is liable to recur and the essential factors in its avoidance, what are the practical steps which may be taken to attain this end? Early last winter Mr. F. B. BEHR, working in conjunction with Colonel WEBB and Captain JENKINS, introduced a wader-footed stocking, perfectly waterproof and capable of being worn comfortably with the service boot. This stocking was tested on ten soldiers in artificial trenches at Beckenham, all of whom wore the same size of wader, although varying greatly in size of boot. An immersion in water at 32° to 40° F. for a total period of 14 to 20 hours was practised, and at the end of the experiment the soldiers' feet were still comfortably warm and efficient. A report on the experiment was made by Mr. BEHR in connexion with Mr. HAROLD F. STRICKLAND, and acting on this information the War Office ordered 10,000 waders for distribution to the troops for use, while the KING and QUEEN personally examined specimens of the wader. Professor DELÉPINE came independently to the same practical conclusion as Mr. BEHR, and suggested waterproof bags similar in shape to fishing boots, but made of oiled silk on account of its cheapness, softness, adaptability, and ease of repair if damaged. He submitted his results to Sir ALFRED KEOGH, who referred the matter to Major P. S. LELEAN, assistant professor of hygiene at the Royal Army Medical College, and we understand that the practical tests carried out with the Delépine stocking were satisfactory, and are likely to be still more so after certain preliminary difficulties in their manufacture have been surmounted. We have ourselves seen and examined the Delépine stocking and find it easy to draw on over the thick sock and one or more pairs of pants. It can then by a slight turn be made to fit smoothly at the ankle. It is then covered with a thin sock and inserted into an army boot at least two sizes too large for the ordinary foot. Another practical suggestion to diminish undue conduction of heat away from the legs was made by Sir R. DOUGLAS POWELL. A grease should be chosen of very low hygroscopic power, and therefore a bad conductor of heat, in order to render the feet and legs less permeable to moisture. At his suggestion Messrs. SQUIRE & SONS, Limited, produced a cheap ointment with an absorbing power for water of only 5 per cent. Sir R. DOUGLAS POWELL, in making this suggestion, then thought that the alternative of water-tight thigh boots would handicap the feet and the legs of the soldier to such an extent as to sacrifice efficiency, and often life, to the mere comfort of the feet. He was not then aware of the possibility of a light waterproof stocking, and would, we doubt not, now agree to use the grease as an adjuvant measure to the impervious covering. We have mentioned only two of the practical forms of leg covering which have come to our notice. We do not wish to claim these as the only possible ways of producing the essential condition of a layer of dry air next the skin. In using any of these stockings the puttee should be discarded. Last winter's experience had already foredoomed it for trench warfare, as the puttee is known to contract 12 per cent. on exposure to moisture, and therefore, even when correctly applied, is calculated to obstruct the circulation when the soldier is exposed to wet mud or trench water.

We have, at any rate, the satisfaction of now knowing, not merely the precise experimental conditions under which the occurrence of trench-foot may be avoided, but various ways in which these theoretical considerations can be embodied in practical forms. Most of the information was available at the beginning of the summer, and ample time has elapsed during the intervening six or seven months to provide the means for prevention. Precautions were already promulgated by an Army Routine Order in November, 1914 (No. 353), which enjoined that boots should not fit tightly, that two pairs of socks should be worn if the boots were large enough, that puttees should never be applied tightly, that the general circulation should be kept up, and a dry pair of socks carried in the pocket. These precautions are good, but obviously quite inadequate where the legs are immersed in cold water or mud, and last winter the Canadian troops had already improvised a thin mackintosh wrapping for the legs. We earnestly hope that the puttee has really been condemned for trench use, in spite of some sacrifice of appearance. It is not worn by the French soldier, in whom the incidence of trench-foot has been notably less than in the British. The puttee can obviously be retained for home and review purposes. We trust that sufficient waterproof material is available to provide thigh stockings for every soldier at the front. The expense of the Delépine stocking has been stated, and is by no means great, and in any case the cost of the total outlay would be compensated within a very few days by the saving of conduction of heat, and therefore of the food ration. Mr. TENNANT'S reply has raised the hope that all this has really been done, but with the arrival in London of fresh cases of frost-bite misgiving cannot altogether be suppressed until the Government is willing to give more precise details as to what has actually been done in the way of prevention of trench-foot.

METROPOLITAN ASYLUMS BOARD: INSTRUCTION IN HOSPITAL ADMINISTRATION.—A three months' course of lectures and demonstrations in hospital administration will be given at the following hospitals:—At the North-Western Hospital, Lawn-road, Hampstead, N.W., on Tuesdays and Fridays, at 5 P.M., beginning Tuesday, Jan. 4th, 1916, by Dr. J. MacCombie, medical superintendent; and at the Grove Hospital, Tooting-grove, S.W., on Mondays and Thursdays, at 5 P.M., beginning Thursday, Jan. 6th, by Dr. J. E. Beggs, medical superintendent. The fee for the course is £3 3s., payable in advance to the Clerk to the Metropolitan Asylums Board, Embankment, E.C.

Annotations.

"Ne quid nimis."

THE WAR AND THE LOWERED BIRTH-RATE.

THE question of the probable effect of the war in still further depressing the already low birth-rate both in this kingdom and in enemy countries has recently been examined by Dr. Louis C. Parkes. In a suggestive paper on the National and Social Aspects of the Lowered Birth-rate, read before the Royal Sanitary Institute on Nov. 23rd, Dr. Parkes gives an account of his latest researches in this direction. He expresses the conviction that for many years after the cessation of hostilities the birth-rates of the belligerent nations must inevitably be reduced still more seriously. He estimates that among the five chief nations now engaged in conflict the number of males of military age who after two years of war will have died from wounds or from disease, or who will be permanently disabled and unable to support a family, will amount approximately to 9 millions. But to these millions must be added the fighting men lost to Belgium, Italy, Serbia, Turkey, and Bulgaria, as well as the losses of men, women, and children in these countries and in France, Poland, Russia, and Austria. These additions may be thought of as bringing up the total losses to 20 millions. In contemplating the present awful sacrifice of human life one consoling reflection at least may be derived from the past history of our race. In years gone by natural causes—e.g., plague, pestilence, and famine—have at times decimated the populations, but these calamities are known to have been generally counterbalanced by substantial advancement of civilisation. It is therefore permissible to hope that in spite of the present suffering thus entailed these terrible losses of ours may be followed by not a few compensating advantages, and that, in our case also, "Armageddon" may prove of ultimate benefit to humanity. The English birth-rate having in recent years fallen more rapidly than the death-rate, the rate of increase of population has tended to decrease. Dr. Parkes is not alone in declaring that whilst the fall in the birth-rate has been conspicuous among the upper, the middle, and the superior working classes, the rate among the lowest class still remains at a high level. In Chelsea the birth-rate of the class inhabiting industrial buildings has only recently begun to fall, whilst the rate of casual labourers living in poor tenement houses has not declined at all. The rate of increase of population in the latter class is now greater than that of the superior class of labourer, and it would appear that the least desirable class of the community is increasing more quickly than any other. We must begin by extending and improving the measures designed to safeguard infant life, including schemes for the welfare of expectant mothers. But in any event the saving of life will be chiefly among the lower sections of the community. Accordingly, if the experience of Chelsea should prevail generally throughout the country, the nation will tend to be reinforced from the least intelligent and most dependent elements of the population. Dr. Parkes therefore foresees that after the war this situation will assume supreme importance and will demand exhaustive investigation as well as prompt action on the part of the Government.

EPSOM COLLEGE.

IN this week's correspondence column Sir Henry Morris states that the Council of Epsom College and of the attached Royal Medical Foundation is in grave anxiety lest they should be unable to continue the benefits of the Foundation without restriction, and on another page appears a full account of what these benefits are and how they may be obtained. These benefits are such as to appeal to every man and woman on the Medical Register, and it can only be want of knowledge of what they represent that can imperil their continuance. Epsom College is situated in a healthy and bracing part of Surrey, 15 miles only from Charing Cross. It stands in its own estate of over 80 acres of ornamental grounds and playing fields. Three hundred pupils are accommodated, drawn from the professional and higher commercial classes. Special attention is paid to the teaching of natural science, and the General Medical Council as well as the Conjoint Examining Board recognise the College as a place at which medical studies may be begun. Last year ten boys passed the first medical examination of the University of London, one gained a scholarship at St. Mary's Hospital, another a College exhibition for natural science at Christ Church, Oxford. At this, our own, admirable public school the sons of medical men pay 65 guineas as a year's fees, and the attached Royal Foundation provides 50 gratuitous places for our necessitous boys. In addition, the Foundation grants pensions of £30 each to 50 aged medical men or widows of medical men in reduced circumstances. It is incredible therefore that there should be any intentional falling off among the medical profession in the support of this Foundation, and if it has occurred it must be due to want of thought rather than lack of heart. Generosity and self-interest alike dictate an ample response to Sir Henry Morris's appeal.

VACCINE TREATMENT OF TYPHOID FEVER.

SOME interesting results have been recorded in *Il Morgagni* (Oct. 31st, 1915) by Dr. Antonio Faginoli, obtained by the intravenous injection of various vaccines and anaphylactic substances. Dr. Faginoli's cases, recorded with temperature charts certainly invite further attention to therapeutic measures which seem to have been effectual and free from any harmful consequences. The intravenous method was chosen because, although the reaction was more marked than that which occurs after subcutaneous injection, the beneficial effects were much more rapid and striking. A severe rigor and rise of temperature followed the injection of vaccine in all cases, but within the space of 24 hours there was a crisis with profuse perspiration. Moreover, one injection was almost always sufficient to obtain a favourable result, rapid and even surprising. The doses employed varied from 150 to 300 million, but the lesser amount was found to be too small and inefficient, necessitating a second injection. Looking at the four cases in which charts are given, in Cases 1 and 2 the patients remained entirely apyretic 24 hours after the injection, in Case 3 definite apyrexia was preceded by a subfebrile temperature for a short time, while in Case 4 there was a slight rise four days after the injection due to diarrhœa; when this ceased the temperature fell. By these experiments it was found that antityphoid vaccine had also a curative action

on paratyphoid fever, and a case is given where an injection of 200 million on the eighteenth day of the disease brought down the temperature completely and permanently. In the present state of our knowledge it is difficult to give an exact interpretation of the mechanism of vaccine therapy, but it is not improbable that it belongs to the field of anti-anaphylactic phenomena, a hypothesis suggested by the results obtained by Lüdke with intravenous injections, not of bacteria but of albumose. These considerations led Dr. Faginoli to undertake the investigation whether by using, instead of vaccines, other substances non-specific and analogous in their action to anaphylotoxin, it were possible to obtain analogous results. The substances used in patients suffering from pulmonary tuberculosis and undulant fever were starch, agar, peptone, and bacterium coli. With the last named he had no favourable results, any remissions being only transitory. In a case of typhoid, on the other hand, a single intravenous injection of 100 million of B.coli given on the twentieth day produced a crisis with permanent fall of temperature and rapid recovery of the patient. It was also found that the intravenous injection of 5–10 per cent. starch solution in 5 or 10 c.c. doses in two cases of typhoid caused either marked improvement or rapid crisis. The injections of starch provoked neither phenomena of reaction nor disturbance; only rarely was there a slight thermic rise on the day of injection. The increase of antibodies in the serum was scarcely appreciable. These cases afford material for forming an estimate of the hypothesis that the mechanism of the action of vaccine therapy belongs to the category of anti-anaphylactic phenomena.

OLD ARMY SURGEONS AND BILLETS.

A CURIOUS sidelight is thrown upon the beginnings of our Army Medical Service by Dr. Robert Hamilton's "Duties of a Regimental Surgeon," first published in 1788. Hamilton, an Irishman of Scottish descent, had become an army surgeon immediately after taking his M.D. in Edinburgh in 1780. On leaving the army he first practised at Dorchester and then at Ipswich. Soldiers abounded in both towns, so that he may be said to have been well qualified to describe their hygiene and the difficulties of those whose duty it was to look after their health. The root of all the troubles of the regimental surgeon was apparently the ancient system of billets. The billet was invariably in a public-house, which Hamilton describes, from bitter experience, as noisy, inhospitable, and often comfortless. How, he asks, can a surgeon study when, in one of the smaller taverns, he has to consort with all classes in the public sitting-room, where as often as not the townsmen, from the mayor to the cobbler, cluster round a table, drinking, "smoaking"—for "the habit" was permitted in inns, and making a noise? "In this dilemma to study is impossible." The surgeon could, indeed, retire to his bedroom, where, says Hamilton, there was no fire, or to the kitchen, from which he was sure to be politely ousted with the remark, "There is a fire in the parlour." The regimental mess-room was as noisy as the inn, and though the company was more select, the drinking was of the hardest. He could study nowhere, and was regarded by landlords as an incubus, for he had little money to spend for the good of the house and the money paid for his keep was inadequate. Boniface in 1788, and later, was accustomed to board soldiers at 4*d*. a day each, but made no profit thereby owing to the amount of small beer consumed by each son of Mars. Subalterns and surgeons were boarded at a higher rate, but both they and the rank and file, billeted with them, were regarded as burdens, especially in time of war. Illness, such as dangerous fevers, often overtook the soldier in his billet, and then the surgeon had to beg for comforts for him, or to move heaven and earth in order to get him carried to comfortable quarters. Soldiers, we are told, slept in garrets or in "back-houses," ill-ventilated, and supplied with dirty beds. Hamilton tells of the case of a man dying from typhus, accelerated by the badness of the accommodation. Again, he describes the influenza epidemic of 1782, which spread over the country in May and June. In March one of his soldier patients died from it in a "billet among the worst I ever saw." The mortar of the walls around his bed stuck to his feet, and the room was pervious both to wind and rain. In this sort of apartment were several beds, occupied by the other soldiers. No change of billet could be procured, for the other publicans feared infection. The surgeon's chief requirement he describes as "a good, careful, and tender nurse." But she is very rarely found. Her place is taken by the regimental housekeeper, or by orderlies, who neglect their patients. A sad picture is painted of the injuries which sick soldiers inflict on themselves in their efforts to attend to the wants of nature, and so forth, in the absence of proper nursing. All Hamilton has to say of the necessity for good nursing and hospital accommodation is sound and modern, but in his day he was a voice crying in the wilderness. Improvement only began after his time, for he died in blindness and old age in 1830.

THE ADVANTAGES OF PELVIC DISSECTION IN CARCINOMA OF THE CERVIX.

DURING recent years the tendency on the part of surgeons has been to make hysterectomy for carcinoma of the cervix as extensive as possible—in fact, the expression "extended abdominal hysterectomy" is now in common use to indicate that the ureters are identified and displaced outwards so as to allow a larger removal of parametrium and a more or less successful dissection of the glands. The modern practice in this country is reviewed by Mr. Victor Bonney in another column. In France a series of cases has recently been published by Maurer in the *Revue de Gynécologie*, in which he compared the results obtained by different operators at the Hôpital Broca, who performed different operations of varying severity up to a full pelvic dissection, including ligation of both internal iliac arteries. It is interesting to note that in the same periodical (June, 1915) Pozzi and Rouhier discuss the possible advantages of a much less extensive operation—viz., vaginal hysterectomy followed by radium treatment. They admit that the cases that they publish are too few to allow definite conclusions to be made, but regard them as encouraging. The method that they employ is to perform a simple vaginal hysterectomy by the clamp method and in the centre of the gauze vaginal pack (which they use as a routine) are placed the radium tubes in rubber envelopes covered with metal. Care is taken that they do not reach the brim of the pelvis for fear of action on the sacral nerves. The radium is left in position for 48 hours and removed at the

same time as the clamps. The latter are well covered with gauze the whole time that they are left on as the metal seems to become somewhat active in the presence of the radium. This new technique is of considerable interest and obviously may fill a useful place in the treatment of an elderly fat debilitated patient with an early growth of the cervix, but with the average patient with a moderately advanced growth it seems improbable that many operators will return to active interference. The difficulties of obtaining purchase on a friable bleeding growth, the increased risk of local sepsis, the cramped operation field, and the awkwardness of dealing with adhesions which commonly go with the vaginal operation for cancer, if they once have become used to the abdominal route—all these do not invite operation. Immediate application of radium to the surrounding tissues can also be made after an abdominal operation—whether this will be a valuable addition to the usual operation can only be proved by further experience.

CEREBRO-SPINAL FEVER.

IN the *Journal of the Royal Army Medical Corps* for September Captain J. F. Gaskell summarises the work of the special laboratory opened at Cambridge in March last for the investigation of cases of this disease. Captain Gaskell's paper, if it does not add any material facts to our present knowledge of cerebro-spinal fever, is useful in that it recapitulates in brief and candid terms the main points upon which information is lacking and because it embodies the experience of a worker whose conscientiousness and technical skill demand consideration. The number of cases observed was 41, showing a mortality of 36·6 per cent. The author recognises that conclusions based upon so small a number of cases must necessarily be received with caution. But with this qualification before us certain of his deductions are well worth quotation. Dealing with etiological factors, Captain Gaskell finds some relationship between unsettled weather, as shown by rapid variations in the barometer readings, and the incidence of the disease. The debilitating influence of a previous illness was another observed predisposing cause; several of the patients had been sent home on sick leave immediately prior to the onset of the cerebro-spinal fever. As with most other observers, Captain Gaskell found that insufficient cubic space per man and inadequate ventilation were powerful predisposing causes. On the other hand, there was no evidence in this investigation that catarrh formed a predisposing factor, and the "catarrhal stage" of the disease, emphasised so strongly by certain workers in the Aldershot Command, was noted to be quite absent. Again, in the carriers which were examined naso-pharyngeal catarrh was conspicuous by its absence, the observer being struck by the absolutely normal condition of all the throats in which the meningococcus was found. The author adds this significant comment: "Another point that is more and more evident on examining the posterior pharynx of a large number of people is the variability in appearance and colour under normal conditions. I hesitate more and more to call a merely red throat an inflamed throat." As to the number of positive contacts or carriers encountered, Captain Gaskell admits quite frankly that this depends entirely upon the strictness with which bacteriological differentiation is carried out, and is to that extent unsatisfactory, as our methods of differentiation are at present difficult and still almost in the experimental stage. The differential tests upon which most reliance was placed in the course of this investigation were the power of growth of the meningococcus at 23° C. and the fermentation of glucose but not of saccharose. The agglutination reaction for differential purposes failed signally, as it did in the hands of Gordon and of Elser and Huntoon. The routine method adopted for bacteriological diagnosis is worth noting here as being eminently practical. The puncture fluid was generously sown on to blood-agar slopes as soon as possible after it was obtained. The fluid not so used was allowed to stand for 12-18 hours in the 37° C. incubator, so that any pus present sank to the bottom; fresh tubes were then sown with this sedimented pus. This second sowing was successful in a certain number of cases in which the first sowing failed. In all cases films were made both at once and after the incubation of the fluid. The combined method just described led to a diagnosis in almost every case in from two to three days, the diagnosis in the majority being clear in one day. The bacteriological method of diagnosis is, of course, the only reliable one. In summarising the effects of treatment Captain Gaskell attaches most importance to drainage of the spinal theca. The most successful treatment consisted in immediate and daily lumbar puncture so long as there were no marked signs of clinical improvement. If the improvement commenced but was not maintained, lumbar puncture was again resorted to. In his series of cases Captain Gaskell found no good results followed the use of serum.

HOSPITAL TREATMENT OF VENEREAL DISEASE.

THE Report of the Royal Commission on Venereal Disease in Sweden, to which we have already referred in our issue of Nov. 13th, has devoted considerable space to the discussion of the vexed question of the hospital treatment of venereal disease. The Commission recognises that greater facilities for hospital treatment must be afforded the subjects of venereal disease than are now obtainable. At present in Sweden such patients can be admitted only to certain hospitals, where, as a rule, they are kept apart from other patients. The Commission suggests that the subjects of venereal disease requiring hospital treatment should be eligible for treatment in any hospital, and the present distinction between venereal and non-venereal disease should cease, the subjects of that disease being admitted to the general wards. In the rare cases in which these patients may be considered undesirable companions on account of risks of infection and moral influences, the Commission has admitted the advisability of reserving an isolation ward in every hospital. But such an isolation ward should not be branded with the stigma of venereal disease, and should be open to patients suffering from other infectious diseases. In the large towns, where many patients suffering from venereal disease require treatment, the Commission is not opposed to large institutions devoted solely to venereal disease and under the control of a specialist. The criticism invited on these proposals shows considerable divergence of opinion as to the wisdom of mixing the subjects of venereal disease with other patients. The Medical Board of Stockholm heartily endorses this "mixed" policy, and cites the many years' experience gained at the St. Göran Hospital in its favour. A

more cautious view is taken by the medical officer in charge of the General Hospital in Malmö. He points out that the unwillingness of patients suffering from venereal disease to enter a hospital is based in most cases on the fear that the nature of the disease should be disclosed. But, he adds, the chances of such a disclosure are equally great whether a patient is admitted to a special ward or not. A further drawback to the "mixed" policy would, in his opinion, be the difficulty experienced in carrying out certain compulsory measures, which would imply an invidious distinction between the two classes of patients in the same ward. He also anticipates objections being raised by the other patients to the subjects of venereal disease as neighbours. The fear that a general hospital should fall into disrepute for adopting the "mixed" policy is also expressed in certain quarters. It is thus evident that the "reforms" proposed by the Royal Commission are not universally acceptable in Sweden.

HYPOCHLORITES AS PROPHYLACTIC DISINFECTANTS.

WE understand that trials have recently been made on the use of electrolysed sea water containing hypochlorites for the disinfection of hospital ships carrying infectious cases. The tests, which were made under the auspices of the Medical Research Committee, seem to have been highly satisfactory. The disinfectant was chiefly used for application to the walls and floors of the wards; it was not used in the latrines on account of possible risk of corrosion of steel pipes. The condition of the wards as regards freshness and absence of odour following the use of electrolysed sea water appears to have been excellent, and the absence of secondary infection among the ships' staffs has also been noted. The cost of the necessary apparatus and of its maintenance in use is low.

GALYL.

IN the present issue of THE LANCET we publish an article by Mr. Harold Spence on the treatment of syphilis with galyl, which is an organic compound of arsenic introduced into this country comparatively recently and up to the present not very widely known here. This compound may be considered to belong to the same group as salvarsan and neosalvarsan, for it is an arsenical compound of benzene, but it differs in the presence in it of a certain amount of phosphorus. The paper is based on somewhat over 1000 injections of the substance at the London Lock Hospital, and therefore it may be regarded as founded on a sufficient number of cases to warrant us in regarding the conclusions of Mr. Spence as of no small value. Galyl appears to have very little toxicity and yet to be at least as efficacious as its predecessors, and the cases related in the paper show how rapidly syphilitic lesions disappear under its use. It is certainly a substance which deserves the careful study of the medical profession, and the paper will be widely read as one of the first expositions of the use of the drug in Great Britain.

Lieutenant-Colonel Sir Ronald Ross, K.C.B., F.R.S., &c., will deliver, in the Robert Barnes Hall of the Royal Society of Medicine, on Monday, Dec. 20th, at 5 P.M., a lecture on the Treatment of Dysentery. The lecture will be followed by a discussion. Sir Ronald Ross has lately returned from Alexandria.

THE QUESTION OF FATIGUE FROM THE ECONOMIC STANDPOINT.

(*Concluded from p. 1262.*)

SECTION II.—*The Tests of Fatigue.*

To measure the results of fatigue accurately the test chosen should (1) vary as the fatigue varies, and (2) vary with the fatigue only. The tests here used particularly are (1) the output of work, and (2) the accidents occurring in the course of work. In addition to the main tests of output of work and accidents, scientific use has been made of some other tests, which fall into three groups: (1) Tests allied to the output of work test, such as the output of electrical or other power during working time, and the labour costs of the factory; (2) tests allied to the accident test, such as the proportion of mistakes or spoilt goods in the product; and (3) medical tests of the after-effects of work, such as the prevalence of sickness and particularly nervous disorders attributable to overwork, and the comparison of blood pressure and breathing (cp. Roth)[1] and of cutaneous discrimination (cp. Griesbach) before and after spells of work. This enumeration almost completes the non-laboratory tests of fatigue capable of statistical treatment. The collection of these non-laboratorial statistics must always wait on the chance occurrence of events that permit comparisons to be made. One chance of finding statistically the influence of the factor of "previous duration of work" on output (or use of power), on accidents (or proportion of mistakes), and on the workers' health, is by dividing the working day into equal parts. Fatigue, it is presumed, will show itself, if anywhere, in the latter part of each working period (spell, day, or week); a comparison of the output, accidents and health, in, and after, the later parts with those in, and after, the earlier, will then show the influence of such fatigue as occurs in the course of the working periods. It is this test of the distribution, over the working period, of output and of accidents that we are here mainly using and discussing. This distribution may be represented either by tables giving actual numbers for each hour or part-period, or by diagrams measuring the time along their base and the amount of output, or accidents, vertically therefrom. The special advantage of diagrams is that sets of figures may be compared which have differently delimited periods, by measuring the amounts at slightly different points on the base.

In statistics of accident distribution, the statistical unit is the individual accident.

Another chance of finding statistically the influence of the cause "previous duration of work" on the output, and, less easily, on accidents, occurs where the duration of the working day has been changed.

Certain conclusions have been reached in consequence of observations recorded in regard to output of work. A firm of calico cloth printers stated that they had tried to run the mill 15 hours a day and had so large an amount of spoiled work that they were compelled to shorten hours. When they did so, the proportion of spoiled work fell, and the output was increased. At a certain ironworks a 48-hours week was introduced, and production was actually increased relatively to the previous years when 54, or 53, hours had been worked. A chemical firm tried

[1] Emil Roth: "Ermüdung durch Berufsarbeit," Fourteenth International Congress of Hygiene and Demography.

the effect of introducing three shifts of eight hours. The output equalled the previous output of ten hours' work, and the earnings, all piecework, equalled the previous earnings. The increase of output and wages per hour was about 33 per cent. The effects on health and sobriety were remarkable, and the cost of production was reduced 33 per cent. per ton of roasted ore. Ernst Abbé, after becoming manager of the Carl Zeiss works in Jena, reduced the working day from nine to eight hours. In the result it appeared the men earned, by piecework, on an average about 3 per cent. more than they had earned in the previous year, working nine hours, and the earnings, per hour, increased in the ratio 100 : 116. The men were unconscious of any special effort, and were surprised to find their earnings increased.

SECTION III.—*Do the Tests Vary with Fatigue?*

Accidents may be divided, as to their causation, into those in which the human element entered and those in which it did not. In the causation of many accidents, the psycho-physiological state of the victim was probably one of the elements, though generally only as a condition enabling some mechanical cause to take effect. A dangerous psycho-physiological state may be either permanent or temporary, but in any case there is no reason why, as a rule, such a state should be more usual later in the working period rather than earlier, unless it is connected with fatigue. Quite a few industrial accidents, however, are caused purely mechanically by explosions, &c., or by recklessness. But these dangers, mechanical or social, are present to the same degree throughout the day, and, therefore, the resultant accidents are as likely to happen at one hour of the day as at another. In both divisions, therefore, accidents not due to fatigue will not alter the shape of the curve of accidents that were due to fatigue, but will simply make its ups and downs less steep. The effect of fatigue would therefore seem to be under-represented by the accident curve, but to what extent depends on the actual proportion of accidents that are not in any way attributable to fatigue.

Bogardus examined the causes of 2203 accidents in Illinois in 1910 individually, and found that only 17½ per cent. "were beyond the control of the injured." This percentage of accidents would only include those purely mechanically or "externally" caused (see above), and there must be an additional percentage of accidents due purely to psycho-physiological states other than fatigue. According to particulars presented by the Federation of Master Cotton Spinners' Associations to the Departmental Committee on Accidents among 1143 accidents, the events causing accident may be classified broadly as consisting of 1068 in which fatigue was contributable, and 75 in which it was not an element. Broadly, therefore, 93 per cent. of these cotton-trade accidents definitely had some psycho-physiological origin, and of these most were, in all probability, the result of fatigue.

SECTION IV.—*Do the Tests Vary only with Fatigue?*

It must now be pointed out that besides fatigue there may be other factors causing variations in the output and accident distribution.

Those factors which like fatigue itself are psycho-physical states in the worker.—The most important of these are practice, spurt, incitement, excitement.

Those factors which are some outside condition or fact.—The "outside" or non-psycho-physical condition which is of most importance as a factor in the time-distribution of both accidents and output, without interposing fatigue, is lighting. As regards this immediate effect of lighting on output, the Industrial Commission of Wisconsin found that a steel plant by just changing its system of lighting could increase its output at night by over 10 per cent. As regards immediate effect of lighting on accidents the National Electric Light Association have published a diagram correlating the monthly proportion of darkness, cloudiness, and sunlight in the city of New York with the monthly fatal accidents in 80,000 industrial plants for three years. In each "correlate" the maximum is round January and the minimum round July. Similarly the accidents per man are higher at night than by day. To a certain extent artificial and other weak lighting may increase accidents by fatiguing the eyes and attention, and hence lighting is included under the conditions of factory hygiene likely to influence fatigue (Section I.); but to a large extent the relation of accidents and lighting is immediate, the distribution of accidents over the day being influenced by the growing objective invisibility of danger-points.

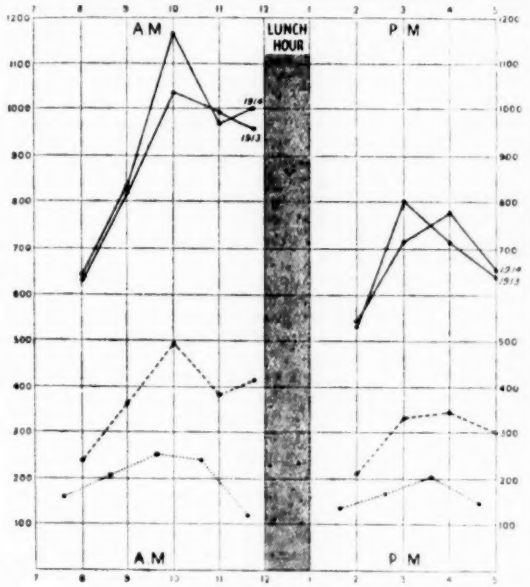
SECTION V.—*Characteristics of the Actual Time-Distribution.*

Tables are given with a view to finding the solution to our central problem: What is the exact correlation of fatigue with the previous duration of work performed? These tables show the output and accidents as distributed over the hours of spell, the spells of a day, and in some cases the days of a week. A "spell" means a period of continuous work. As far as the figures before us show, there is little weekly fatigue, little daily fatigue, but a great deal of spell fatigue. In this nearly all our statistics agree remarkably.

In the case of output there is in every table an increase of the second over the first hour of the spell except for a very slight decrease in Table IV. (machine sewing) in the afternoon. This almost general increase is as much as from 24 to 38 in soldering and from 85 to 106 in hand chocolate-covering. After the second hour of each spell there is generally a gradual decrease till the last hour, though in the third hour the output may be yet higher than in the second. In the case of accidents there is in every one of our twenty odd tables and graphs, except at Cadbury's and H. Renolds's, a constant increase of accidents in the course of the first three hours of each spell, morning, afternoon, and before breakfast, unless, of course, there are pauses. This increase is particularly marked in cotton spinning, where the third hour has 665 accidents against the first hour's 316 in the morning spell, and 536 against 222 in the afternoon spell. After the third hour accidents usually increase still further, but this depends rather on the total length of the spell, for we find that in whichever is the last hour of the spell (fourth or fifth) the accidents decrease, so that the accident distribution or curve may most accurately be said to reach its maximum on the penultimate hour of the spell. In the last hour of the spell there is a true decrease in the accident-rate per given number of men and per given amount of output, or, at any rate, a check to the increase. The output of accident curves appear also to be slightly modified by certain other factors —e.g., temperature, sex and age of worker, and nature of work.

As illustrative of the series of tables and diagrams recording observed facts, we will consider some of those referring to the textile trades.

FIG. 1.—*Accidents in Textiles (United States).*



—— Massachusetts cotton.
– – – – ,, wool.
..... United States cotton.

Times of work.—Massachusetts, 7-12 and 1-6 (56 hours' week). Southern States, 6-12 and 1-6.15 (60-72 hours week).

Table showing Cotton Output, Barlow and Jones (Manchester), August and September, 1914. (Processes where human element enters most into output.)

Hours of day.	No. of picks per loom.	No. of laps per scutcher.
6-7	4·96	4·5
7-8	5·55	4·62
8.30- 9.30	4·82	4·06
9.30-10.30	5·50	4·25
10.30-11.30	5·25	4·44
11.30-12.30	5·67	3·94
1.30- 2.30	5·05	3·81
2.30- 3.30	5·60	3·94
3.30- 4.30	5·59	3·75
4.30- 5.30	5·45	4·00

Two Slobbing Frames for Four Days. Average Time Spent per Day per Set.

Sets (in order of time)	1st.	2nd.	3rd.	4th.
Minutes spent on set ...	114 ...	113 ...	120½ ...	126

Finally, some attention must be given to the influence of different systems of factory management in diverting output or accident distribution from the "normal curve"; and, for the question of human fatigue, the most important part of any system of management are the devices to ensure speed in individual operations and in the operation or action of the factory as a whole. The natural speed may, so to speak, be tuned up or down, and of late, to judge from working-class opinion, there has been a good deal of tuning up. The distinctive feature of the accident curve in all these shops, in which efficiency has been carried to a very high pitch, is the higher rate of accident in the afternoon than in the morning. Thus:—

	Morning. Accident rate per hour.	Afternoon. Accident rate per hour.
Hans Renolds	317	338
Ford Motor Co.	222	235·5
Cadillac ,, ...	121	141
Northway ,, ...	93	98

The new school of scientific management in America has also devoted some thought to the fatiguing effect of intense work. Mr. Knoeppel, for instance, in his book "Installing Efficiency Methods," carefully distinguishes strenuousness from efficiency and holds that "any standard determined should be one that a man can attain day in and day out without injury to his health of body or mind" (p. 109). This standard time is reckoned at about the mean of a man's average and highest speed under unimproved conditions, with provision for rest often amounting to 16 per cent. or 20 per cent. of the whole time and enforced by clock at intervals varying for different kinds of work. A familiar example of the efficiency of such a system occurs in F. W. Taylor's "Principles of Scientific Management." For heavy labour, where the man's strength is exerted by either lifting or pushing something which he grasps in his hands, it was discovered that for each given pull or push on the man's arms it is possible for the workman to be under load for only a definite percentage of the day. For example, when pig iron is being handled (each pig weighing 92 lb.) a first-class workman can only be under load 43 per cent. of the day. This scientific "law" was then applied at the Bethlehem Steel Works, and resulted in the men's earnings (at a constant piece-rate of $3\frac{1}{10}$ cents a ton) jumping from $1.15 to $1.85 a day. To this now classical case of the pig iron may be added that of a machinist in the employ of the New England Butt Company, who was unable to complete his standard task per hour at a lathe turning metals till a notice was posted up bidding him rest 12 minutes after every 48 minutes' work.

The significance to industrial organisation of the researches chronicled above may be sketched roughly in the following sequence.

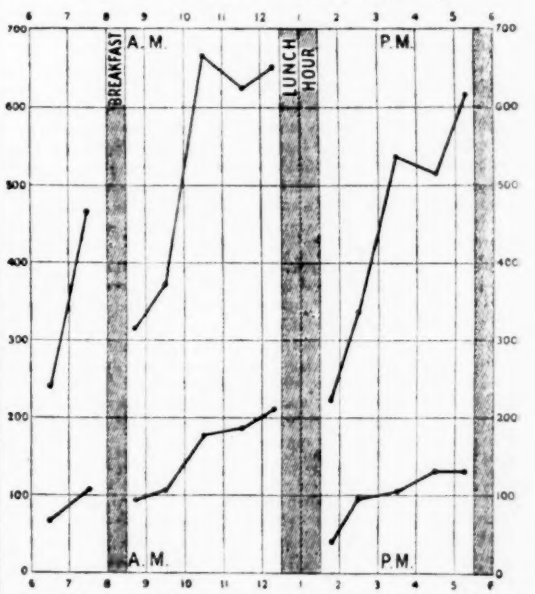
1st. The importance of the rôle played by fatigue and other inner states of the individual worker.

2nd. The importance of the rest-pause.

3rd. The importance of the nature of the work in modifying the onset of fatigue.

4th and finally. The importance of adapting properly the hours of labour in each kind of work.

FIG. 2.—*Accidents in Textiles (Lancashire).*



Lancashire cotton. Upper curve = total; lower curve = women only.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

City of Liverpool (Report for 1914).—As usual an admirable review of the work done by the health department of the city during the year under notice is given in Dr. E. W. Hope's report. Of special interest at the present time is an account of the demands of an exceptional character which were made upon the department on the outbreak of war. Thus, the need for medical men was immediately felt in Liverpool, as in other places, and a large number of the medical staff employed by the corporation in public health work found occupation in connexion with the military operations. Three assistant medical officers, two tuberculosis officers, four school medical officers, and ten of the infectious hospital resident medical officers volunteered their services and were accepted. These were replaced by temporary officers, some of whom in turn also left the service for military work. To meet the emergency caused by the resignations of so many medical officers arrangements were made with local practitioners to undertake certain duties, a good deal of the school work being done by lady doctors. In addition to the foregoing, 32 members of the clerical and inspectorial staff joined the forces in various capacities, where their special training would be of advantage. The city ambulance staff was also placed at the disposal of the War Office, and rendered very valuable assistance in removing the wounded (whether arriving by rail or by sea) to the various institutions in or near the city used as military hospitals. This staff attended each one of the troop-trains which arrived with wounded soldiers, mainly at Aintree, but occasionally at Lime-street Station. A considerable amount of extra work was involved in dealing with soldiers home on leave at whose homes infectious sickness had occurred, and much attention was paid, at the request of the Local Government Board, to the subject of cerebro-spinal fever, which, happily, never at any time showed any increase above what may be regarded as the normal. The disinfection as well as cleansing and drying of military clothing, bedding, and rugs of various descriptions was carried out from time to time. Fazakerley Hospital was cleared of infectious cases and prepared for the reception of wounded soldiers and handed over to the military authorities, who thoroughly appreciated the value of a well-equipped institution of this character. By arrangement with the Local Government Board and the War Office, coöperation between the sanitary authorities and the military authorities was agreed upon, and the health department was enabled to give valuable assistance in regard to the sanitation of the drill-sheds, billets, &c., of the troops stationed in Liverpool, as well as in many other directions. This brief résumé of the work done by the public health department of Liverpool to aid the military authorities in the arduous task which the exigencies of war imposed upon them gives some idea of the very important part played by local authorities at this time in securing not merely the health and comfort of the troops, but also in safeguarding the public health of the civil community from the many dangers incidental to the great influx of population occasioned in many districts by the presence of large numbers of soldiers. It says much for Dr. Hope's power of organisation that arrangements were made which enabled the whole of the military work to be carried out with relatively trifling disorganisation of the work of the city and it is satisfactory to know that, so far as ordinary routine sanitary administration is concerned, everything may be said to have been carried out as usual.

The population of Liverpool at the middle of the year was estimated at 767,992, the birth-rate being 30·0 per 1000, the death-rate 19·5 per 1000, and the infant mortality-rate 139 per 1000 births. Two cases of small-pox were reported during the year, and there was a small outbreak of plague. The circumstances associated with the latter are instructive. The father of the family in which the disease occurred was employed at a cattle-food mill in the city, and was principally engaged at a crushing machine used to crush linseed, grain, manioc root, &c. He was taken ill on July 13th and died on July 20th. About ten days after his death his widow and several of his children began to show somewhat similar symptoms. On these circumstances being reported to the health department by the medical man in attendance the whole family and one contact were removed to hospital for isolation. A little boy, a neighbour, who was frequently in the house, also contracted the disease and was taken to hospital. In this family there occurred nine cases of plague, father, mother, and seven children, and three of these children died. The tenth case, the little boy who played with the other children, recovered. The outbreak is interesting, as the infection was evidently brought home by the workman to his family. The presumption is that he was infected at his place of work by fleas derived from rats which had come from abroad in bags of material. Hospital accommodation for the isolation of a limited number of cases of measles and whooping-cough has now been provided in Liverpool, and Dr. Hope expresses the opinion that some lessening of the latter disease may be expected as a result of this measure, as experience has repeatedly shown that the introduction of a case of whooping-cough into a court has resulted in the spread of the infection to practically the whole of the infant population in that court.

In reviewing the work done in the city in connexion with the prevention of infantile mortality, Dr. Hope prefaces his remarks with the following statement: "Although it may not be fully realised, the object of infant welfare is promoted by all sanitary operations, great or small. In large centres of population the problems arising in the actual carrying out of sanitary measures are often in themselves of such magnitude and interest that the ultimate reason for which they were undertaken is apt to be obscured. Take, for example, the housing operations, modern town-planning operations, or even the cleansing and scavenging of cities, there are few who fully grasp the bearing of these undertakings on ante-natal hygiene and infant welfare. Commonly the executive operations are necessarily and properly allocated to executive committees, whose names imply their functions, such as housing, cleansing committees, and so forth, and their laudable work is carried forward and accomplished without any consciousness that the ultimate goal is (among other things, no doubt) ante-natal hygiene and infant welfare; and the close connexion of the action, with the good which has resulted, will at once be assented to by any person to whom the relationship is pointed out." We entirely agree with Dr. Hope's view on the matter. At the present time, when health visiting, the establishment of infant-welfare centres, schools for mothers, and other such methods are being so strongly advocated, it may be well to bear in mind that measures of this nature are unlikely of themselves greatly to reduce the infant mortality unless, at the same time, due regard is had to the importance of general sanitation. For example, the privy-midden still prevails in close proximity to the houses in many districts in England, and where this evil exists no amount of instruction to mothers in the care and management of their infants and children can eliminate the danger of noxious matter being conveyed from the privy-midden to the house through the agency of flies.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 96 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 6793 births and 6430 deaths were registered during the week ended Saturday, Dec. 4th. The annual rate of mortality in these towns, which had steadily increased from 13·3 to 16·7 per 1000 in the six preceding weeks, further rose in the week under notice to 18·5 per 1000 of their aggregate population, estimated at 18,136,180 persons at the middle of last year. During the first nine weeks of the current quarter the mean annual death-rate in these towns averaged 15·2, against a corresponding rate of 15·9 per 1000 in London. Among the several towns the death-rate last week ranged from 8·5 in Enfield and in Tynemouth, 10·7 in Aberdare, 11·3 in Gillingham, 11·4 in Wimbledon, and 11·5 in Ilford and in Bournemouth, to 24·0 in Gateshead, 24·3 in Liverpool, 26·9 in Stockport, 27·2 in Walsall, and 27·7 in Blackpool.

The 6430 deaths from all causes were 625 in excess of the number in the previous week, and included 348 which were referred to the principal epidemic diseases, against 345 and 373 in the two preceding weeks. Of these 348 deaths, 98 resulted from infantile diarrhœal diseases, 93 from measles, 63 from whooping-cough, 62 from diphtheria, 20 from scarlet fever, and 12 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was

equal to 1·0, against 1·1 per 1000 in the previous week. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 175, 120, and 125 in the three preceding weeks, fell to 98, and included 34 in London, 7 in Liverpool, 5 in Birmingham, and 4 in Sheffield. The deaths attributed to measles, which had been 67, 65, and 70 in the three preceding weeks, further rose to 93, and caused the highest annual death-rates of 1·9 in Cardiff, 2·3 in Blackburn, 4·6 in Stockport, and 5·1 in Gloucester. The fatal cases of whooping-cough, which had been 51, 49, and 57 in the three preceding weeks, rose to 63, and included 21 in London, 6 in Liverpool, 4 in West Ham, and 3 each in Willesden, Smethwick, and Derby. The deaths referred to diphtheria, which had been 74, 67, and 72 in the three preceding weeks, fell to 62 last week, of which 14 occurred in London, 5 in Liverpool, 4 each in Stoke-on-Trent and Preston, and 3 each in Portsmouth, Great Yarmouth, Birmingham, St. Helens, Hull, and Cardiff. The deaths attributed to scarlet fever, which had been 20, 31, and 34 in the three preceding weeks, fell to 20, and included 5 in London and 2 in Coventry. The fatal cases of enteric fever, which had been 14, 13, and 15 in the three preceding weeks, fell to 12, of which 2 were registered in London.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had declined from 3110 to 2927 in the five preceding weeks, further fell to 2811 on Saturday last; 278 new cases were admitted during the week, against 339, 336, and 318 in the three preceding weeks. These hospitals also contained on Saturday last 1562 cases of diphtheria, 54 of enteric fever, 39 of measles, and 11 of whooping-cough, but not one of small-pox. The 1698 deaths from all causes in London were 214 in excess of the number in the previous week, and corresponded to an annual death-rate of 19·6 per 1000. The deaths referred to diseases of the respiratory system, which had increased from 169 to 398 in the seven preceding weeks, further rose to 516 in the week under notice, and were 204 above the number registered in the corresponding week of last year.

Of the 6430 deaths from all causes in the 96 towns, 229 resulted from different forms of violence and 512 were the subject of coroners' inquests, while 1740 occurred in public institutions. The causes of 62, or 1·0 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Sheffield, Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, and in 64 other smaller towns. Of the 62 uncertified causes, 14 were registered in Birmingham, 12 in Liverpool, 5 in London, 3 each in Southend-on-Sea and Preston, and 2 each in Warrington, Bury, Manchester, and Barrow-in-Furness.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,345,500 persons at the middle of this year, 1000 births and 1006 deaths were registered during the week ended Saturday, Dec. 4th. The annual rate of mortality in these towns, which had increased from 16·1 to 22·7 per 1000 in the four preceding weeks, fell to 22·4 per 1000 in the week under notice. During the first nine weeks of the current quarter the mean annual death-rate in these towns averaged 17·8, against 15·2 per 1000 in the large English towns. Among the several towns the death-rate last week ranged from 13·7 in Falkirk, 14·0 in Clydebank, and 16·3 in Motherwell, to 25·6 in Paisley, 34·0 in Greenock, and 37·8 in Hamilton.

The 1006 deaths from all causes were 14 below the number in the previous week, and included 87 which were referred to the principal epidemic diseases, against 61 and 80 in the two preceding weeks. Of these 87 deaths, 31 resulted from measles, 21 from diphtheria, 17 from infantile diarrhœal diseases, 11 from scarlet fever, 4 from whooping-cough, and 3 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·9, against 1·0 per 1000 in the large English towns. The deaths attributed to measles, which had been 26, 16, and 29 in the three preceding weeks, further rose to 31, of which 9 occurred in Hamilton, 6 each in Edinburgh and Greenock, 4 in Coatbridge, and 3 in Glasgow. The deaths referred to diphtheria, which had increased from 9 to 15 in the four preceding weeks, further rose to 21, and included 8 in Glasgow, 5 in Paisley, and 2 each in Edinburgh and Kirkcaldy. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 31, 12, and 15 in the three preceding weeks, rose to 17; 7 deaths were registered in Glasgow, 4 in Dundee, 3 in Aberdeen, and 2 in Greenock. The deaths attributed to scarlet fever, which had been 14, 16, and 15 in the three preceding weeks, fell to 11, and comprised 7 in Glasgow, 3 in Edinburgh, and 1 in Ayr. The 4 deaths referred to whooping-cough were slightly above the average in the earlier weeks of the quarter, but showed no excess in any particular town. Of the 3 fatal cases of enteric fever 2 were registered in Glasgow and 1 in Dundee.

The deaths referred to diseases of the respiratory system, which had increased from 150 to 322 in the four preceding weeks, fell to 291 in the week under notice, but were 128 above the number registered in the corresponding week of last year. The deaths attributed to violence numbered 34, against 28 and 20 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,212,380 persons at the middle of this year, 447 births and 507 deaths were registered during the week ended Saturday, Dec. 4th. The annual rate of mortality in these towns, which had been 16·8, 20·6, and 20·1 per 1000 in the three preceding weeks, rose to 21·8 per 1000 in the week under notice. During the first nine weeks of the current quarter the mean annual death-rate in these towns averaged 17·6, against corresponding rates of 15·2 and 17·8 per 1000 in the English and Scotch towns respectively. The annual death-rate last week was equal to 25·9 in Dublin (against 19·6 in London and 22·4 in Glasgow), 21·1 in Belfast, 23·8 in Cork, 17·7 in Londonderry, 9·5 in Limerick, and 28·5 in Waterford, while in the 21 smaller towns the mean death-rate was 16·9 per 1000.

The 507 deaths from all causes were 40 in excess of the number in the previous week, and included 50 which were referred to the principal epidemic diseases, against 31 and 47 in the two preceding weeks. Of these 50 deaths, 15 resulted from measles, 12 from infantile diarrhœal diseases, 11 from whooping-cough, 7 from scarlet fever, 4 from diphtheria, and 1 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 2·2, against corresponding rates of 1·0 and 1·9 per 1000 in the English and Scotch towns respectively. The deaths attributed to measles, which had increased from 2 to 10 in the four preceding weeks, further rose to 15, and comprised 13 in Dublin and 2 in Belfast. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 14, 9, and 17 in the three preceding weeks, fell to 12, of which 6 were registered in Dublin, 3 in Belfast, and 2 in Waterford. The fatal cases of whooping-cough, which had increased from 2 to 9 in the four preceding weeks, further rose to 11, and included 4 in Belfast and 2 in Dublin. The deaths attributed to scarlet fever, which had been 6, 3, and 10 in the three preceding weeks, fell to 7, of which 5 occurred in Belfast. Of the 4 deaths from diphtheria, which were slightly in excess of the average in recent weeks, 2 occurred in Cork. The fatal case of enteric fever was recorded in Dublin.

The deaths referred to diseases of the respiratory system, which had increased from 53 to 117 in the five preceding weeks, further rose to 144 in the week under notice. Of the 507 deaths from all causes, 138, or 27 per cent., occurred in public institutions, and 7 resulted from violence. The causes of 17, or 3·4 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the large English towns the proportion of uncertified causes did not exceed 1·0 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE undermentioned have been entered as Surgeons for temporary service in His Majesty's Fleet:—

Dated Dec. 1st: Roger Paul Ninnis.

Dated Dec. 2nd: James Dominic Murphy and Henry Cecil Jennings.

Dated Dec. 3rd: Henry Swarbrick Brown.

Dated Dec. 4th: Clive Gardiner-Hill.

ARMY MEDICAL SERVICE.

Colonel William W. Pike, D.S.O., to be temporary Surgeon-General whilst holding the appointment of Director of Medical Services of an Army (dated Nov. 1st).

Major Farquhar Maclennan to be a Deputy Assistant Director-General (dated Nov. 20th).

Colonel Robert H. Firth is retained on the Active List under Articles 120 and 522, Royal Warrant for Pay and Promotion, 1914, and to be supernumerary (dated Dec. 1st).

Thomas Sinclair to be temporary Colonel (dated Nov. 15th).

ROYAL ARMY MEDICAL CORPS.

William Wrangham to be temporary Lieutenant-Colonel whilst employed at the Bradford War Hospital (dated Nov. 1st). Richard John Morris, late Surgeon-Major, The King's Own (Royal Lancaster Regiment), Territorial Force, to be temporary Lieutenant-Colonel (dated Oct. 18th).

The undermentioned to be temporary Majors:—Dated Nov. 16th: Alexander Charles O'Sullivan. Dated Nov. 26th: Henry John Neilson. Dated Nov. 30th: Hugh Lett.

The undermentioned to be temporary Majors whilst employed with the Bradford War Hospital: Dated Nov. 25th: William Hartley Thompson and James Phillips.

Temporary Captain Ralph B. Mahon relinquishes his commission (dated Nov. 7th).

Temporary Lieutenant Henry James Thomson relinquishes his commission on account of ill-health (dated Nov. 25th).

Lieutenant (on probation) William W. Blair is confirmed in his rank

The undermentioned temporary Lieutenants to be Captains:—

Dated Nov. 1st: Claude G. Colyer, Horace C. Colyer, Stanley A. Riddett, Charles Weller, Frederick W. Broderick, George G. Timpson, Horace A. Cutler, Richard P. Rosser, Charles E. H. Smith, Reginald J. Rogers, Herbert L. Hatch, James K. Clarke, Peter Drummond, David J. Evans, William A. L. Dunlop, and Daniel McKelvey.

Dated Nov. 2nd: Charles L. Graham, Charles D. Pye-Smith, William A. Hislop, John Alexander, Thomas B. Johnstone, Charles M. Bernays, Ralph S. Renton, Richard B. Llewellyn, Robert Crothers, Peter H. Robertson, Laurence W. Pole, William Tregenza, Robert Thomson, Harry V. White, and Sydney Jacob.

Dated Nov. 3rd: Octavius S. Maunsell.

Dated Nov. 4th: William F. Neil, Arthur R. Muir, William B. Clark, Thomas S. G. Martin, Alexander Hunter, and Cecil Powell.

Dated Nov. 5th: Samuel McM. McLay.

Dated Nov. 6th: Sydney A. Tucker, Julius M. Bernstein, Millais Culpin, and Charles F. Constant.

Dated Nov. 7th: Henry M. Moir, Courtenay Yorke, and John Stevenson.

Dated Nov. 9th: Reginald J. Hearn, Alexander K. Forbes, Albert L. Walker, George F. Petrie, Herbert G. M. Henry, and Ernest F. W. Buckell.

Dated Nov. 10th: Godfrey W. Mitchell, Thomas M. Newton, Lawrence Crombie, Sidney J. Cullum, John H. Dancy, Albert E. Cotterill, Charles W. Smith, and Robert Craig.

The undermentioned temporary Lieutenants to be temporary Captains:—

Dated Oct. 10th: Charles H. Robson.

Dated Nov. 1st: Arthur G. Wilkinson and Hugh Y. Riddell.

Dated Nov. 2nd: Harold Mowat and Percy G. Lock.

Dated Nov. 7th: Alexander J. Couper and Lawrence T. Dean.

Dated Nov. 9th: Idwal J. Williams.

Dated Nov. 10th: Frederick E. Wynne, John L. Menzies, Richard O. H. Jones, and James A. Delmege.

Dated Nov. 11th: Herbert M. Cockcroft, James McManus, Bruce A. West, Richard L. Barwick, and Harold T. Mant.

Dated Nov. 12th: Alexander W. Young.

Dated Nov. 13th: James B. Mitton and James P. O'Flynn.

Dated Nov. 14th: Kenneth J. Yeo, Arthur N. Hooper, Walter H. Kiep, Frederick Carson, Alexander J. Kendrew, and Thomas W. G. Hogg.

Dated Nov. 16th: George D. Yates, Francis J. Morris, Robert C. Maclachlan, Arthur E. Moore, Albert E. M. Woolf, and Samuel P. Rea.

Dated Nov. 18th: Archibald L. McLean and Andrew B. Raffle.

Dated Nov. 21st: Cecil Clarke, John I. Shepherd, Charles H. Fennell, George J. Wilson, Albert E. Salkeld, and Percival C. Cole.

Dated Nov. 22nd: John C. Matthews.

Dated Nov. 23rd: George L. Atkinson, Lionel C. Ferguson, Alexander G. Higgins, Arthur G. M. Middleton, Charles J. Singer, Keith D. Falconer, William A. Murphy, Lawrence W. Bain, Walter De M. Hill, James MacGregor, and Norman C. Patrick.

Dated Nov. 24th: Donald Clark, Henry W. Teague, Edward H. H. Granger, Cunison D. Rankin, Charles J. A. N. Mercier, and Alexander Galletly.

Dated Nov. 25th: Hugh H. C. Fuller.

Dated Nov. 26th: Arthur Davies and Norman C. Graham.

Dated Nov. 28th: Thomas Grimson.

Dated Nov. 29th: Edwin F. O'Connor.

Dated Nov. 30th: Lewis H. I. Bell, Holden Carson, Robert J. English, and Charles J. Morton.

Dated Dec. 4th: John Lunn and Arthur G. Mossop.

The undermentioned to be temporary Captains:—

Dated Oct. 25th: Walter Theodore Ohlmus.

Dated Nov. 3rd: John Rupert Collins and James Christopher Reginald Braine-Hartnell.

Dated Nov. 4th: Thomas Walcot.

Temporary Lieutenant George Cooper relinquishes his commission on account of ill-health (dated Dec. 1st).

Temporary Honorary Lieutenant Rufus Clifford Thomas to be temporary Lieutenant (dated Oct. 10th).

The undermentioned to be temporary Lieutenants:—

Dated Nov. 3rd: Norman Frederick Hallows, Edward Segs Massiah, Robert Forbes, David Saunders Jones, Henry Edgar Barnes, and Hector Kenneth Macdonald.

Dated Nov. 4th: Cyril Courtenay Lord, Chambre Corker Vigurs, Francis de Courcy Keogh, Wilfred Jameson, Charles Bannigan, Joseph Allan MacLean, Frederick William Hobbs, Francis Brunel Hawes, Henry Stagg Byers, William Alexander Ferguson, and Wharram Henry Lamplough.

Dated Nov. 5th: Robert Andrew George Elliott, William Land Dibb, James MacRae, Thomas Hugh Edey, William Douglas Newland, and Edward Hesketh Roberts.

Dated Nov. 6th: Frederick Bennett Julian, James Alexander Richard Thompson, William George Frederick Johnson, Alfred Cresswell Taylor, Robert Evans Thomas, and Armitage Edward Frederick Litton Forbes.

Dated Nov. 7th: Ernest Patrick Titterton, Thomas Davidson, George Arthur Gordon, Percival Cecil Hardinge Ryan, and Maynard Lambert Loveless.

Dated Nov. 8th: Rupert William Percival Jackson, Robert Taylor Todd, William Robert Percival McNeight, James Ogilvie, Arthur Edward Schokman, Ernest William Nowell Wooler, Alexander George Hains Moore, James Largue Murray Smith, William Barbour, Samuel McNair, Albert Sophron Sieger, Richard Kenyon, James Moffat, John Crawford, William Butement, William Frederick Walker, Frederick William Lee, Robert William Macpherson, John Milo Ryan, Laurence Sebastian Cecil Roche, Andrew Rutherford, and Charles Wilmot Wanklyn James.

The undermentioned to be temporary Honorary Lieutenants:—

Dated Nov. 13th: Gordon Cranstoun and Harold Gardiner-Hill.

Dated Nov. 15th: Geoffrey Oliver Hempson.

Dated Nov. 16th: Edgar Broughton Barnes.

The undermentioned temporary Lieutenants relinquish their commissions:—

Dated Oct. 31st: Reginald W. Davies and Alexander S. Allan.

Dated Nov. 1st: Dudley G. Greenfield, Archibald F. Wright, Edward F. Palgrave, and David J. M. Legge.

Dated Nov. 2nd: John N. Glaister, Alexander G. Gilchrist, Charles A. Flintoff, and Arnold Leeming.

Dated Nov. 3rd: Lawson Cairns.

Dated Nov. 4th: George H. U. Corbett.

Dated Nov. 5th: D'Arcy R. W. Cowan.

Dated Nov. 6th: Stephen F. Lynch.

Dated Nov. 7th: Evan P. Evans and William Fraser.

Dated Nov. 9th: Herbert S. Forsdike.

Dated Nov. 10th: Charles R. Verling-Brown.

Dated Nov. 12th: Samuel F. Holloway.

Dated Nov. 14th: William Elwood.

Dated Nov. 15th: John H. Thornley.

Dated Nov. 16th: Athelstane Nobbs.

Dated Nov. 17th: William Deane.

Dated Nov. 18th: Wallis C. P. Bremner and Henry Catling.

Dated Nov. 19th: Thomas F. Murphy and Alfred H. Clough.

Dated Nov. 21st: Horace S. Berry and Ambrose W. Owen.

Dated Nov. 27th: Thomas Hutchinson and William E. N. Dunn.

INDIAN MEDICAL SERVICE.

The King has approved the promotion of the following officers:—**Captain to be Major**: Dated Sept. 1st: Vincent Blumhardt Nesfield.

Temporary Lieutenant to be temporary Captain: Dated Nov. 21st: John Frederick Henry Morgan.

The King has approved the grant of temporary rank to the undermentioned:—To be temporary Captain: Dated Oct. 21st: John Rutter Williamson.

To be temporary Lieutenants: Dated August 20th: Shanker Keshav Phadke. Dated August 21st: Rastim Edulji Dadachanji. Dated August 23rd: Ram Nath Khosla and Joseph Robert Gwynne. Dated August 25th: Hem Chandra Roy Chowdhury. Dated August 26th: Huggahalli Sundara Rajan. Dated August 28th: Sudhir Kumar Bose. Dated August 30th: Sarat Chundra Sen Gupta. Dated Sept. 2nd: Leo Sigaravan Machado. Dated Sept. 13th: Saradindu Bhusan Mukerjee. Dated Sept. 14th: Jagannath Vishnu Shirgaonkar. Dated Sept. 17th: Satyapal.

The King has approved the retirement from the Service of Lieutenant-Colonel Letterstedt Frederick Childe (dated Nov. 18th).

SPECIAL RESERVE OF OFFICERS.

The Prince of Wales's Own (West Yorkshire Regiment): Lieutenant William L. M. Gabriel resigns his commission with a view to qualifying for a commission in the Royal Army Medical Corps.

TERRITORIAL FORCE.

Army Medical Service.

Captain William McC. Wanklyn, from the Sanitary Service, is appointed Deputy Assistant Director of Medical Services, North Midland Division.

Royal Army Medical Corps.

West Lancashire Field Ambulance: Major Thomas Holt, from Attached to Units other than Medical Units, to be Major. Huntly Nevins Pelly (late Lieutenant, Royal Army Medical Corps, Territorial Force) to be Captain.

Wessex Field Ambulance: Lieutenant George D. Perry to be Captain. Captain George D. Perry resigns his commission on account of ill-health.

London General Hospital: Lieutenant Andrew T. Swan to be Captain.

Southern General Hospital: Major John Mortimer resigns his commission on account of ill-health. Lieutenant William A. Stokes to be Captain.

Home Counties Field Ambulance: Lieutenant Henry T. Jones and Benjamin A. Bull to be Captains.

Eastern General Hospital: Captain Wilson Tyson is seconded.

London (City of London) Sanitary Company: Second Lieutenant James Davidson, from the Royal Irish Rifles, to be Lieutenant.

Northern General Hospital: Lieutenant-Colonel Joseph Faulkner Dobson is placed on temporary Half-pay List on account of ill-health. Lieutenant James D. Lickley to be Captain.

Home Counties Casualty Clearing Station: Captain William M. Parham to be temporary Major. Captain Gerald W. C. Hollist, from Attached to Units other than Medical Units, to be Captain.

South-Eastern Mounted Brigade Field Ambulance: Captain Alexander G. S. Logie is seconded for duty with Highland Mounted Brigade Field Ambulance.

East Lancashire Field Ambulance: Major Stephen Nesfield, from Attached to Units other than Medical Units, to be Major.

Western General Hospital: Frank Hamilton Lacey (late Lieutenant, East Lancashire Divisional Train, Army Service Corps) to be Lieutenant.

Sanitary Service: Andrew Norris Stevens to be Captain, whose services will be available on mobilisation.

North Midland Mounted Brigade Field Ambulance: The undermentioned Lieutenants to be Captains: Robert Hargreaves and William E. Kingdon.

East Anglian Field Ambulance: Captain James Arthur to be temporary Major.

Lowland Field Ambulance: Charles Stuart Peddie Black (late Lieutenant, the Highland Light Infantry) to be Captain.

Supernumerary for Service with the Officers Training Corps: Lieutenant Andrew D. Clinch to be temporary Captain whilst serving with the Medical Unit of Dublin University Contingent, Senior Division, Officers Training Corps.

Attached to Units other than Medical Units.—William Allan Smith (late Major, The East Lancashire Regiment) to be Major. To be Captains: William Young Martin (late Captain, The Manchester Regiment), Lieutenant George H. H. Waylen, Lieutenant John E. Ransford, and Horace Carlos Barr (late temporary Lieutenant, Royal Army Medical Corps). To be Lieutenants: John Muir and George Charles Walker.

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

First place in the current issue of the *Journal of the Royal Army Medical Corps*, dated October, is given to a preliminary note on the Clinical Aspect and Diagnosis of Paratyphoid Fever, by Captain J. A. Torrens and Lieutenant T. H. Whittington, based largely on the result of impressions received while observing some 300 or 400 cases of paratyphoid fever in the 14th Stationary Hospital. "In view of the constant leucopenia which is present in all enteric group infections," say the authors, "a routine enumeration of leucocytes should be undertaken in all cases, though, of course, this does not help in the absolute diagnosis of paratyphoid fever." Also they have not found the diazo reaction to be of diagnostic value in paratyphoid. Among other interesting contributions are Identification of the Meningococcus, a joint paper by Major M. H. Gordon and Mr. E. G. Murray; Preliminary Note on the Rapid Preparation of High-Titre Agglutinating Serum for the Meningococcus by Captain T. G. M. Hine; and a report on the Injection of Anti-tetanus Serum in Tetanus Cases by Mr. Kenneth W. Goadby. The sanitary disposal of latrine contents in billeting areas where there are difficulties connected with the constant trenching of ground is dealt with in an illustrated article by Surgeon-General W. G. Macpherson, C.B., C.M.G., K.H.P. For the shallow trench Surgeon-General Macpherson substitutes a shallow tray into which individual excreta are received, the contents being at once placed into an incinerator, while the urine is poured into a pit. Empty biscuit tins form the trays, and the incinerator is constructed out of a cresol or paraffin drum. Both articles are waste produce of an army. The system has been on trial for periods of one to four months, and "in no case has it failed to meet all the requirements of a simple, immediate, and efficacious means of disposing of excreta and urine."

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Royal Victoria Hospital Tuberculosis Trust.

Sir Alexander Christison presided on Nov. 30th at the annual general meeting of the Royal Victoria Hospital Trust in Edinburgh. He called attention to the statement in the first annual report that those who had interested themselves in the difficult work of caring for consumptive sufferers would be the first to recognise that the relief at present afforded by sanatorium benefit to insured persons under the National Insurance Act, even with the possible extension of such relief to dependants of insured persons and to others by the Insurance Committees and the local authorities, would prove insufficient for a long time to meet the wants of the consumptive patients who, physically and financially bankrupt, had to lead a precarious existence for months and years. One of the purposes of the Royal Victoria Hospital Tuberculosis Trust, he said, was to afford assistance to consumptive patients throughout Scotland whose case was not met by any statutory authority. There was a large call for the provision of after-care, to ensure that the advantages of sanatorium benefit should not be frittered away on the patient's return to his home. Urgent need existed likewise for further development in respect of the provision of treatment for tuberculous children. The Trust felt that the hope of the future lay in the more thorough and scientific training of doctors and nurses and health visitors in the prevention of the disease, and one of the chief purposes of the Trust was to secure the training of a generation of doctors quick to recognise the earliest manifestations of tuberculosis and to seek to get to the roots of the disease. Mr. Donald Crawford, K.C., in moving the adoption of the report, referred to the considerable delay which had occurred in obtaining the sanction of Parliament to the agreement come to with the Edinburgh town council, which delay, he trusted, would be brought to a speedy end. Sir Robert Philip, in proposing a vote of thanks to the lady collectors, stated that funds had come in abundantly this year despite the war, and had not been spent so freely as the Trust would have liked. He should like the public to be thoroughly aware that as soon as official sanction to their agreement was received they would part with this money. There were many ways in which their funds could be spent, as, for instance, in research, in training men and women doctors and nurses, and in educating the public generally upon the larger aspects of tuberculosis. Twenty-four of their former tuberculosis patients at the Royal Victoria Hospital were serving with the colours. One of these had been badly "gassed," but in spite of his former lung troubles a week in hospital sufficed to send him back to the firing line. That was a very comforting fact in face of the oft-repeated statements that nothing could be done for tuberculous patients. If a man could be cured to this extent their work had not been in vain. Dr. Leslie Lyall, who seconded, said that more than 50 former patients of the Royal Victoria Dispensary were on active service, thus proving that a consumptive patient once cured might keep cured and do good work.

A Generous Bequest.

The late Miss Elizabeth Weir, of 4, Greenhill-gardens, Edinburgh, who died on Nov. 13th

bequeathed the following sums to hospitals in Edinburgh:—The Royal Infirmary (in memory of her brother, Mr. James A. Weir, of Kilbagie), £5000; the Hospital for Sick Children, £500; the Royal Hospital for Incurables, £1000; and the Royal Victoria Hospital for Consumption, £1000.

Sphagnum Moss for Dressings.

A factory will shortly be formally opened in Edinburgh for the purpose of preparing sphagnum moss to be used as a dressing for wounds. It adjoins the works of Messrs. Redpath, Brown, and Co., engineers, and owes its origin to the good offices of Sir John Cowan. It is not a commercial undertaking, but is a contribution to a good cause. The large number of wounds of war requiring dressing at the present time threatened to exhaust the available supply of the usual materials. Attention therefore turned to the remarkably absorbent and cleansing properties of sphagnum moss, which grows in profusion in many parts of the country, and is now being utilised in our field hospitals with good results. The valuable qualities of sphagnum are stated to have been discovered in the peat moss litter works near Kiel. A workman chanced to bandage with moss one of his fellows who had been seriously injured, and the hospital surgeon who removed the improvised dressing was surprised to see the beneficial effect produced. The wound was cleaned and had begun to heal. Investigation followed and confirmed the discovery. The structure which has been erected in Edinburgh for preparing the moss is some 91 feet long by 12 feet wide. It is divided into four compartments for the treatment of the moss. First, the moss is put into a sublimating trough, where it is washed and freed from any foreign matter. It is then put through a wringer and passed into the drying room, which is provided with radiators and steam-heated. When thoroughly dried the moss is passed into a weighing-room. Here it is parcelled out, so that when pressed it is of the desired size and thickness. The last process is the compressing, which is done by hydraulic power. The works are capable of dealing with an unlimited quantity of moss.

Dec. 7th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Certification under the National Health Insurance Act.

THE scheme of certification arranged by the Irish Insurance Commissioners, with the coöperation of representatives of the medical profession and of the Approved Societies, has now been put before the profession by the Commissioners, and is intended to come into operation on Jan. 1st, 1916. In a letter dated Dec. 4th the Commissioners have invited every medical man in Ireland to sign the agreement necessary to entitle him to participate in the scheme. Its cardinal principle is that every medical man should sign the requisite certificates for his own insured patients, the contention for which the profession has been struggling for the past two and a half years being thus granted. For the purposes of payment certain administrative areas are regarded as "certification areas," and to each certification area has been assigned a capitation rate for the insured resident therein. In the country districts the unit area will be the dispensary district. The capitation rates vary in different areas so as to secure, as far as possible, that throughout the whole country medical men will receive the same remuneration for the same amount of work involved. The rate in cities and urban districts will be 1*s.* 3*d.* per insured person; in certain country areas it will be 2*s.*; and in certain other country areas, where the population is more scattered, it will be 2*s.* 6*d.* The method of distribution of the sums assigned in each area to the medical men practising within that area remains unsettled for the present. In urban areas it is hinted that there will be a pool which will be divided among the medical men who have signed certificates in proportion to the work done by them, but it is not expected that the payment will be solely in proportion to the number of certificates. "Declaring-on" certificates and "declaring-off" certificates may, for example, be given a higher value than "continuing" certificates. In country areas the method of distribution will probably be simpler, as in many districts the entire practice is in the hands of the Poor-law medical officer. An important provision is that medical men joining in the scheme will be responsible to the Insurance Commission alone, and will not be controlled in any way by Approved Societies or Insurance Committees. The certificates to be given under the scheme are those required in claiming sickness and sanatorium benefits. It was originally intended that the scheme should be strengthened by the appointment of a number of referees, whose opinion could be claimed in appeal against the certificate of the medical attendant, but owing to the demands of the War Office for medical men the Commission has found it necessary to postpone this part of the scheme. The Irish Medical Committee is to be congratulated on the result of the fight waged for more than two years on behalf of the medical profession of Ireland. The profession has not, of course, got everything it demanded. The point of principle has, however, been conceded, and the greater part of the money demanded is now promised. The success of the scheme depends on the whole-hearted and careful coöperation of the profession.

John Johnston Austin, M.D. R.U.I.

Dr. John Johnston Austin, one of the best known general practitioners in Belfast, died on Dec. 3rd at his house in Clifton-street, Belfast. Dr. Austin was born at Ahoghill, co. Antrim, in 1860 and was educated at the Royal Academical Institution and at Queen's College, Belfast, where he was a scholar, and especially proficient in chemistry. In 1882 he graduated M.D., M.S., with distinction, in the Royal University of Ireland, and after a short time as an assistant in England began to practise in Larne, coming to Belfast about 26 years ago. There by his skill and devotion to his work he rapidly built up a very large general practice. A thoroughly hard worker, Dr. Austin, who was a man of few words, won his patients' confidence by his thorough attention, great kindness, and tried skill; and while he was specially proficient in midwifery, he spared no trouble to keep himself thoroughly conversant with the latest developments of medical science. Not for many years has the death of a doctor in Belfast elicited greater evidence of universal regret.

Dec. 7th.

MEDICAL MAYOR.—Mr. E. P. Dickin was on Dec. 6th re-elected Mayor of Brightlingsea. According to ancient custom the election took place in a church belfry.

Correspondence.

"Audi alteram partem."

EPSOM COLLEGE: THE ROYAL MEDICAL FOUNDATION.

To the Editor of THE LANCET.

SIR,—It is again my duty to ask you to allow me to appeal to your readers for contributions in aid of the Royal Medical Foundation attached to Epsom College.

Owing to the loss of many subscriptions as a result of appeals in connexion with the war, the Council are experiencing a period of extreme anxiety lest they should be unable to maintain the existing numbers of pensionerships and foundation scholarships. At the same time, the calls upon the foundation will most certainly increase. At this year's election the son of a medical man who was killed in action on board H.M.S. *Good Hope* was elected to a foundation scholarship, and the Council anticipate that not a few other appeals will arise directly or indirectly as a consequence of the war.

As is well known, a large number of civilian medical men are serving with the Royal Army Medical Corps, the Red Cross Society, and in volunteer hospitals in France and elsewhere, and those who are carrying on their professional work at home will doubtless consider it both a duty and a privilege to assist any of their brethren or their dependents who may suffer financially in consequence of the sacrifices they have made in the service of their country. It is earnestly to be hoped that whilst so many generous and munificent gifts are being made by our countrymen to aid Belgians, Serbians, Poles, and others of our Allies, our own benevolent institutions will not be allowed to suffer.

May I therefore appeal to those of your readers who can do so to increase their contributions to our Medical Foundation, and to those who are not already annual subscribers to come to the assistance of the Council at this particularly anxious time. Although subscriptions of less than one guinea do not give voting privileges, I may add that smaller contributions are gladly received.

Believe me, Sir, yours very faithfully,

HENRY MORRIS,
Honorary Treasurer.

Nov. 26th, 1915.

THE COEXISTENCE OF DISEASES.

To the Editor of THE LANCET.

SIR,—The text-books do not say very much about two diseases affecting a patient at the same time. I saw some years ago tetanus and scarlet fever in the same patient which ended fatally. I attended a patient for years with rodent ulcer of the nose, who finally was attacked and destroyed by carcinoma of the cervix uteri. I regret I have not exact notes of these two cases, but the following short notes may be of interest:—

1. A boy, aged 4 years and 4 months, was attacked with chicken-pox on Nov. 7th, 1915. On the 15th, while many vesicles were present, after four days of catarrh, sneezing, and high temperature, he was covered with a typical measles rash and developed severe croupous pneumonia of the left lung.

2. This patient was a sister of the above, aged 1 year and 4 months, who was constantly in the room with him. She developed a well-marked chicken-pox rash on Nov. 24th—i.e., 17 days after the rash on her brother. On the 26th measles rash developed; the illness in this case running a mild type.

In both children the two rashes were present at the same time, very typical both as regards character and distribution, with this exception—in neither case did chicken-pox spots develop on mucous membrane or scalp. As far as I could judge, one disease did not modify the other in any way.

I am, Sir, yours faithfully,

A. W. LEMARCHAND.

Barnstaple, Nov. 28th, 1915.

PROFESSOR C. A. EWALD.

To the Editor of THE LANCET.

SIR,—I am pleased to read in THE LANCET of to-day's date Colonel R. Saundby's defence of the late Professor Ewald against the harsh criticisms of his character made by the *Münchener Medizinische Wochenschrift*. I can completely corroborate all that Colonel Saundby says. I had the privilege of knowing Professor Ewald well for many years and of meeting him both in Berlin and in this country as well as at international congresses. I have always esteemed him most highly as one of the gentlest and kindest as well as one of the least bumptious and self-assertive of all the Germans I have known. Possibly this great difference from the typical German, as he now stands displayed before the whole world, may have offended the Bavarian paper and called forth its unfavourable criticism.—I am, Sir, yours faithfully,

LAUDER BRUNTON.

New Cavendish-street, W., Dec. 4th, 1915.

To the Editor of THE LANCET.

SIR,—I should like to add my own to Professor Saundby's appreciation of the late Professor Ewald of Berlin. He was certainly one of the most friendly and polished German professors I ever met. I feel sure that he must have regarded the conduct of his colleagues in most of the German Universities as unworthy and inexplicable. It is pleasing to recall the memory of at least one of such men, together with that of Madame Ewald, who have left happy and lasting impressions of kindness and sympathy for all who had the pleasure of their acquaintance.

I am, Sir, yours faithfully,

DYCE DUCKWORTH.

Dec. 6th, 1915.

NERVE-STRAIN AND WAR.

To the Editor of THE LANCET.

SIR,—It is with much interest and appreciation that I have read in THE LANCET of Nov. 20th and 27th (pp. 1155 and 1201) of the specially equipped hospitals designed to minister to the comfort and speedy recovery of nerve-shaken officers who have been transiently disabled by the stress of war. It is a much-needed provision, and will prove invaluable both in promoting their restoration to health and in shielding them from the risk of association with lunacy.

It is hoped that within a short time (as already advocated in THE LANCET last January) hospital treatment of a similar nature may be provided for those soldiers of the rank and file who have been similarly disabled. The substitution of purely medical treatment for the present method of consignment to an annexe of a county asylum would be a great boon, for though they may be well fed and kindly looked after in the annexe the public is well aware that only *certified lunatics* can be placed in county asylums, and will undoubtedly

regard their location in such a position and under such administration as proof that they are looked upon as *insane*, and the circumstance will in all likelihood have a prejudicial effect upon their future. They are liable, moreover, to be really certified at any time on the authority of the asylum doctor and commanding officer. It will be a sad thing if at the end of the war a number of these soldiers who have fought for us and have incurred this injury on our behalf should be found in asylums, when by timely attention and the provision of suitable preventive measures such a result might easily be to a great extent avoided.

I am, Sir, yours faithfully,

Dec. 7th, 1915. S. E. WHITE, M.B.

MONSONIA OVATA IN DYSENTERY.

To the Editor of THE LANCET.

SIR,—When dysentery threatens our troops would it not be well to adopt the South African plan and use the tinctura Monsoniæ ovatæ? (see Martindale and Westcott.) I have had most excellent results with it in Africa. Mr. John Maberly was the first to introduce the remedy in Zululand. It must be used fearlessly, and its effect is produced in three days in cases where ipecacuanha and bismuth fail. I think if this drug was brought to the notice of the army authorities it would save lives. Messrs. Turner and Co., wholesale chemists, Pietermaritzburg, Natal, supply it.

I am, Sir, yours faithfully,

Dublin, Nov. 30th, 1915. R. A. J. ASBURY, M.B. Edin.

*** Mr. Maberly's account of his experiences with Monsonia ovata will be found in THE LANCET of Feb. 6th and 13th, 1897, and Feb. 5th, 1910.—ED. L.

CARTRIDGE SHOT IN THE APPENDIX.

To the Editor of THE LANCET.

SIR,—The note by Dr. C. C. Boyle on this subject in your issue of Oct. 2nd has recalled to my mind a similar case which I published in the *Bulletin de la Société Anatomique* for June, 1912. A man aged 53, after complaining of gastric and urinary troubles for three years, was found to have a marked stricture and vague pains over the right half of the abdomen. Laparotomy was performed, and an enlarged and congested appendix found containing 19 lead shot. The patient was neither sportsman nor angler, and the origin of the shot could not be elicited. Sections of the appendix showed evidence of simple chronic inflammation. I have also just read of a case reported in the *Bulletin des Armées de la République* (1915, No. 142) in which during an operation on an infantry soldier for appendicitis a small fragment of shell case, evidently swallowed, was found in the intestine.

I am, Sir, yours faithfully,

Dr. HENRI VIGNES,
Médecin Aide Major, Ambulance 1/85, Secteur Postal 26.

Nov. 25th, 1915.

INSURANCE FINANCE.

To the Editor of THE LANCET.

SIR,—In the Parliamentary Intelligence printed in THE LANCET of Nov. 20th will be found several direct and candid answers to questions asked with a view to showing that the National Insurance Act has failed in the working owing to defective financial provision on the part of those responsible for it. I doubt whether the pessimistic views freely circulated with regard to insurance finance are wholly justified by the facts, and it is possible that those who on different grounds may quite honestly be hostile to the Act are being misled into undue pessimism with regard to its future. Sensational headlines in lay newspapers with references to muddle and bankruptcy do not prove the existence of either, and may proceed wholly or partly, and perhaps without the writer being conscious of it, from political prejudice against those responsible for a new and admittedly experimental type of legislation. One of the questions in the House of Commons referred to dealt more particularly with London, but the recent attack upon the Insurance Acts has been general, as well as being directed against particular points in view of difficulties which have arisen in the metropolitan area, and for which parallels can no doubt be found elsewhere.

It is common knowledge, for example, that in all districts difficulties in connexion with the administration of the Insurance Act have arisen as a direct consequence of the war. These are of various kinds. The scarcity of practitioners has created a serious problem with which Insurance Committees are confronted, while the exodus of young and healthy men who in time of peace were insured persons, and therefore represented a large proportion of the sums available for medical benefit, has given rise to another. But I am not aware that any of these difficulties, or even the sum of all of them, had succeeded in bringing things to such a pass as to justify the disturbing statement attributed to Mr. Handel Booth that the finances of the London Insurance Committee had hopelessly broken down. The area covered by the London Committee is an exceptionally large one, and it is possible to suppose circumstances which would render the financial side of the Act in London more liable to failure than in less cumbersome areas. But do such circumstances exist? The statement is of a nature to be disturbing, not only to hundreds of thousands of insured persons, but to 1500 London panel practitioners and nearly a thousand pharmacists, as well as to a whole army of people engaged in administering the Act, and ought not to have been made unless it were based upon the securest foundation of fact. Perhaps Mr. Booth has been incorrectly reported; if he has, it is his duty to correct the report; if not, he should substantiate the statement.

It is possible that the likelihood of a deficit in the Committee's Sanatorium Benefit Fund and the proposed method of supplying this deficit have alarmed Mr. Booth and prompted him to draw his inference. The agenda at one of the meetings of the London Insurance Committee contained a report the purport of which was that the attention of the Finance Subcommittee had been drawn to a communication from the Insurance Commissioners to the Sanatorium Benefit Subcommittee, which communication indicated that, having regard to the arrangements for treatment already made by the committee, a deficit is likely to arise on the Sanatorium Benefit Fund by the end of 1915, and that the subcommittee responsible for the administration of that fund considered that its income should be augmented by a transfer of £2000 from the General Purposes Fund. There is nothing at all irregular in this procedure, and there is nothing surprising in the fact that there is a deficiency in the Sanatorium Benefit Fund when it is considered how difficult it is to budget for an unknown quantity. Exceptionally heavy calls have been made on this

fund in London, and in view of the circumstance that practitioners may order what drugs and what nourishing food they consider necessary for persons undergoing domiciliary treatment it is obvious that until we have had a further spell of experience of the operation of this side of the Act it will be quite impossible to judge whether or not the system originally devised for financing it is adequate. But the whole financial machinery of the Act will not break down because of a shortage in this particular fund, and so far as I have been able to ascertain the finances of the London Insurance Committee are not in danger. The question asked in the House of Commons by Mr. Booth with reference to sanatorium accommodation showed that there is a considerable waiting list, but not one that is increasing or likely to increase hereafter.

To turn to another matter, panel practitioners who have only received part payment of their fees should not conclude that there is any association between Mr. Booth's statement and the withholding of advances on this year's accounts. This is solely due to the fact that the Commissioners have not yet been able to calculate what sums are due to practitioners because a figure corresponding to the approximate enlistment of insured persons is not at present available. When this figure has been calculated full settlement of practitioners' accounts will be made, and although the amount available for distribution will be substantially less than in previous years the per capita allowance will be precisely the same.

To speak generally, the position would appear to be that there is no danger of a general breakdown in Insurance Act finance, or of one more particularly affecting London. In London and in other areas at particular points in the Act's working, of which the treatment of tuberculosis is an example, some financial readjustment may prove to be necessary, and care and economy are imperative. Economy, however, is necessary in the working of any such great national scheme, and it frequently only becomes possible after experience has enabled us to realise where leakages are liable to occur. In this instance war, with all its consequences, has supervened at the moment when experience had begun to show where administrative defects might be remedied, and where the revision of financial provisions might prove to be desirable.

I am, Sir, yours faithfully,

Dec. 3rd, 1915. A—G.

*** Our correspondent's letter is supported by Mr. C. Roberts's statement in the House of Commons on Dec. 1st.—ED. L.

UNIVERSITY OF LONDON.—At a meeting of the Faculty of Medicine of the University of London, held on Tuesday, Dec. 7th, Sir E. Cooper Perry, M.D., F.R.C.P., and Professor F. W. Andrewes, M.D., F.R.C.P., F.R.S., were elected to represent the Faculty on the Senate for the remainder of the period 1915–19, in the place of Mr. H. L. Eason and Sir Wilmot P. Herringham, resigned.—The Paul Philip Reitlinger prize, offered this year for the best essay on "The Economic Condition of the People of England in 1815 in Comparison with the Present Day," has been awarded to Herbert Roland Hodges, of the London School of Economics. The prize, this year of the value of £40, was founded with funds given to the University by Mr. Albert Reitlinger in memory of his son, a student of St. George's Hospital Medical School, who died on Dec. 3rd, 1911. Next year the prize will be awarded for the best essay embodying the result of some research work on a medical subject carried out by the candidate.

Obituary.

KENNETH WILLIAM MILLICAN, B.A. CANTAB., M.R.C.S. ENG., L.R.C.P. EDIN.

WE much regret to announce the death of Mr. Kenneth William Millican, until recently the Assistant Editor of THE LANCET, who died on Sunday, Nov. 28th, the day after his sixty-second birthday.

Kenneth Millican was born at Leicester, where his father, William Millican, was an architect of high position, a leading member of the Conservative Party, and a colonel in the Volunteers, of which service he had been from the beginning an ardent advocate. He was educated at the Atherstone Grammar School and Emmanuel College, Cambridge, and graduated in honours in the Classical Tripos. He showed his all round capability by proceeding to St. Mary's Hospital as a natural science scholar. In 1879 he took the diploma of M.R.C.S. Eng. and in the following year that of L.R.C.P. Edin., and was for a time a surgeon in the service of the Ocean Steamship Company. Later he practised in Kineton, Warwickshire, and also as a specialist in throat diseases in Welbeck-street. He was for a time surgeon and laryngologist to the Infirmary for Consumption in Margaret-street and also the West-End Hospital for Paralysis, while he displayed his literary capacity by writing two volumes of verses —"Smoke Clouds" (jointly with the late Dr. A. B. Clarke) and "Passion Spray," both volumes showing considerable command of metre. In 1887, in collaboration with C. H. Stephenson, he produced a domestic drama entitled *Fettered Freedom* at the Vaudeville, and at this time he was well known as an amateur actor. As early as 1883 he wrote a small book entitled "The Evolution of Morbid Germs," which displayed remarkable foresight in suggesting what may be called Darwinian doctrines in relation to disease, and quite recently Millican's attitude towards the question of anomalies as affecting the specific germ theory has received endorsement in our columns by modern writers. He inherited his father's belief in the principle of voluntary military service, and as a Captain in the 9th Battalion of the King's Royal Rifle Corps he became a thorough-going soldier in spirit, as well as an authority on military administration.

"He was a man of singularly versatile and varied talent; so versatile, indeed, that it probably operated against his obtaining a great success in any one direction." We are here quoting from a private communication supplied to us by two great friends of our late Assistant Editor, and they account in this way for Millican's sudden changes of objective in making a career for himself. For in 1892 he took a post as surgeon in the British and Foreign Steam Navigation Company, in the following year he went as medical officer to some mining works in Mexico, and resigned this post three years later for an appointment with the Mountain Copper Mines in California, where he worked until 1897. At this point his literary career as far as medicine is concerned commenced, for he was appointed Associate Editor of the *New York Medical Journal*, a post which he held for six years, leaving it to become the Editor of the *St. Louis Medical Journal*, which periodical for two years he conducted with success. At the end of that time alterations in the management and style of the paper made him transfer his energies to the *Journal of the American Medical*

Association, and for four years he was the Literary Editor of our distinguished contemporary. At the end of 1911 he joined the editorial staff of THE LANCET, and for the last four years had worked in that capacity.

Millican's health broke down suddenly in the summer, when a damaged heart began for the first time to show signs of want of compensation. For a time he held his own, but during the last few weeks of his life the end was seen to be inevitable.

He was twice married, and leaves by his first wife a grown-up son and daughter who are settled in the United States, and by his second wife, who survives him, one daughter 12 years of age. To them we offer our sincere sympathy, and speak in so doing for the staff of THE LANCET, who will always cherish their regard for Kenneth Millican's memory.

Medical News.

UNIVERSITY OF BRISTOL.—At the recent meeting of Council the degree of M.Sc. was awarded to Major F. Percival Mackie, R.A.M.C.

ROYAL INSTITUTION.—Amongst the lecture arrangements at the Royal Institution before Easter of particular interest to the medical world are the following:—Professor Charles S. Sherrington, six lectures on the Physiology of Anger and Fear and Nerve Tone and Posture; Professor Arthur Keith, two lectures on Sea Power as a Factor in the Evolution of Modern Races; Professor Henry E. Armstrong, two lectures on Organic Chemistry in War; Professor Sir J. J. Thomson, six lectures on Radiation from Atoms and Electrons. The Friday evening meetings will commence on Jan. 21st, when Professor Sir James Dewar will deliver a discourse on Problems in Capillarity. Succeeding discourses will be given by Professor Leonard Hill, Professor William Bateson, Professor W. M. Bayliss, and other well-known men of science.

ROYAL SURGICAL AID SOCIETY.—On Dec. 7th the Lord Mayor of London presided over the fifty-third annual meeting of this society at the Mansion House. In spite of the loss of income in consequence of the war the report of the society shows a record of much labour well and economically done. In addition to the ordinary work of the society, 501 patients consisting of relatives and dependents of our soldiers and sailors, recruits and refugees, have been assisted in obtaining surgical appliances at a cost to the society of £700. A sum of £1000 has also been set aside for the relief of cases arising directly out of the war, but which do not come within the scope of Government provision. The ordinary income of the society shows a reduction of £2395, and the legacies a falling off of £7636, while the expenditure on relief has been £3053 less than last year, and the number of patients treated and of appliances supplied proportionately less than during the previous 12 months. The total number of patients dealt with during the year has been 25,471, an average of 509 per week, and the appliances supplied 39,290. The grand total of appliances supplied since the commencement of the society is now 895,986. On the motion of Mr. Sheriff G. A. Touche, M.P., seconded by the Rev. G. C. Wilton, the report was unanimously adopted. On the motion confirming the appointment of Sir Rickman J. Godlee as honorary consulting surgeon, and re-appointing Mr. E. Muirhead Little, Mr. T. H. Openshaw, C.M.G., and Mr. E. Laming Evans as surgeons, Sir Dyce Duckworth said that the society had the full confidence of the whole of the medical profession, who recognised the value and quality of the work which it did. It was a helpmate to the hospitals. Sir Thomas Crosby seconded, and, the motion being carried, Mr. Muirhead Little briefly replied. During the course of the proceedings the secretary announced subscriptions to the amount of £318 17*s.* 6*d.* A vote of thanks to the Lord Mayor asking him to accept the office of a vice-president was received with acclamation.

The War.

THE CASUALTY LIST.

THE following names of medical men appear among the casualties announced since our last issue:—

Killed.

Captain F. Shingleton Smith, I.M.S., attached to the 120th Infantry.

Lieutenant M. Mackenzie, R.A.M.C., attached to the 2nd Royal Irish Rifles, received his medical education at the London Hospital, where he held several appointments.

Lieutenant J. R. G. Garbutt, R.A.M.C., attached to the 8th King's Own Scottish Borderers.

Previously Reported Killed, then Reported Wounded and Prisoner of War, now Reported Died of Wounds as Prisoner.

Lieutenant J. R. Spensley, R.A.M.C., attached to the 8th Buffs (an obituary notice appeared in THE LANCET of Oct. 30th, p. 1000).

Wounded.

Lieutenant-Colonel H. O. B. Browne-Mason, R.A.M.C.

Captain D. Arthur, I.M.S., attached to the 7th Rajputs.

Captain R. Knowles, I.M.S., attached to the 110th Mahrattas.

Captain W. J. Powell, I.M.S., attached to the 2nd Battalion 7th Gurkhas.

Captain W. C. Spackman, I.M.S., attached to the 48th Pioneers.

Captain G. Tate, I.M.S., attached to the 104th Rifles.

Lieutenant M. B. Patel, I.M.S., attached to the 7th Rajputs.

DEATHS AMONG THE SONS OF MEDICAL MEN.

The following sons of medical men must be added to our lists of those who have fallen during the war:—

Captain C. MacDonald, 1st Battalion, attached to the 2nd Battalion, 7th Gurkhas, son of the late Dr. MacDonald, of Dumfries.

Lieutenant M. Mackenzie, R.A.M.C., attached to the 2nd Royal Irish Rifles, youngest son of the late Sir Stephen Mackenzie, of Cavendish-square, London.

Private J. E. Brocklehurst, 6th Sherwood Foresters, second son of the late Mr. T. H. Brocklehurst, of Lytchett Minster, Dorset.

THE CENTRAL MEDICAL WAR COMMITTEE: THE SUPPLY OF MEDICAL MEN FOR THE NAVAL AND MILITARY MEDICAL SERVICES.

In a brief note last week we announced the fact that the Central Medical War Committee for England and Wales had taken counsel with representatives of the Insurance Commissioners for England to consider how response to the demands for medical officers in the army could be furnished in the most efficient and safe manner. Both parties have had a conference at the office of the Local Government Board, and in many points a common view was thus attained. At this conference a memorandum prepared by the Central Medical War Committee was discussed, in which the question was raised of certain classes of medical practitioners being urged to join the services in preference to others. The memorandum, which had been furnished to the

President of the Local Government Board and to the chairman of the National Health Insurance Commission for England and Wales, suggested that the order of importance to the country of medical service was at the present time as follows: (1) Attendance on the soldiers; (2) sanitary service at home; (3) attendance on the sane of the civilian population; and (4) attendance on the insane and unfit.

The inference was that the first demand should be made on the last class, though it was admitted that in great measure such a course implied with regard to the patients a return to conditions existing before much recent legislation. But it was held at the Central Medical War Committee that the care of the insane and unfit could be maintained up to a certain standard by the employment of women practitioners in posts previously held by males and also of neighbouring medical practitioners above military age, while the transference of clerical work to laymen and women was recommended. The proceedings at the conference were private, but there is no indiscretion in mentioning that it was stated for the Local Government Board that the Board was in general agreement with the memorandum, though it was necessary that any general practitioner who was employed to do institutional work must possess the suitable knowledge. It came out, as showing the demands already made by the war on the medical personnel of the Board, that over 35 per cent. of the tuberculosis officers were in military employ, that nearly one-third of the whole-time medical officers of health were on active service, and that about 12 per cent. of part-time medical officers of health had also been allowed to accept commissions. It was mentioned at the conference that the Central Medical War Committee for England and Wales proposed to address a circular letter to the secretaries of the local Medical War Committees giving instructions as to the canvass of medical men of military age, and adding a classification of medical men as a guide. The classification as at first submitted was considerably criticised.

The Circular Letter to the Local War Committees.

The following is an abstract of the circular letter, which has now been approved, to be sent to the local War Committees, with an appendix putting out a system of classification which the Central Medical War Committee believe will be found useful. The letter which is signed by the honorary secretaries of the Central Medical War Committee, begins by affirming the position of that Committee as a recruiting body, and continues as follows:—

Canvass of Medical Men of Military Age.

(*a*) The cards of the Group No. 41 relate to the medical practitioners. The blue cards for men of military age under Lord Derby's scheme—i.e., for those under 40 years of age—are at the chief local recruiting office. On representations from the chairman of the local Medical War Committee these cards can be obtained, provided the applicant will guarantee to make the necessary canvass of the men whose cards are handed over. The necessary steps are: (1) a personal application of the chairman (or failing him the secretary) of the local Medical War Committee; (2) the registration of the applicant as an official canvasser under the scheme; (3) receipt of the official white card authorising the holder to call upon the men.

(*b*) In districts where the number of medical men is considerable it is obviously not possible for one man to do the canvass. In one such district the local Medical War Committee has appointed no fewer than 30 canvassers, all of whom are the senior medical men of the district. Each of these is to be registered as an official canvasser, so that the responsibility for the safety of the blue cards is distributed.

(*c*) In some districts the number of medical men will be few, and the work each of these is doing, and the possibility of enlisting those of military age, may be so well known that possession of the blue cards will present no advantage to the officers of the local Medical War Committee. In such cases it is suggested that the chairman of the local Medical War Committee should notify the chief local recruiting officer that the arrangements as regards the medical men of the district are in the hands of his committee.

(*d*) It is particularly urged that men should not be asked to apply directly to the War Office for commissions in the R.A.M.C. The notification of their willingness to serve should be sent by the local Medical War Committee to the office of the Central Medical War Committee, which will communicate with the practitioners concerned and issue to them a certificate of enrolment. It is of the utmost importance that the Central Committee should be able to correlate the requirements of the civil population and the military services and only by the careful selection of the men from the districts where they most abound can this be done. From some districts offers of service will be held over until the relative plethora of other districts has been drawn upon.

The circular letter then states that if a local Medical War Committee is unable to canvass the medical men of military age it will be apparent that the Central Medical War Committee is unable to carry out the duty that has devolved upon it. The canvass will then be carried out by the local Recruiting Committee, or, should Lord Derby's organisation be no longer working, by whatever authority is existent.

Classification of Medical Men.

The next step will be the local grouping and classification of the men, not only of the men up to 40, but also of those up to 45. A list, as far as the honorary secretaries of the Central Medical War Committee have been able to ascertain the facts, has been sent to the local Medical War Committees.

On receipt of the grouping from each area the Central Medical War Committee will proceed to apply to all the men of military age, which in the medical profession is regarded as 45, to fill up a form of application for a commission, giving them a guarantee that they will only be called up as and when required, and will have at least one month's notice in which to make their arrangements. Those medical men of military age who claim to be physically unfit should obtain from a duly recognised military medical examiner a certificate of unfitness.

Appendix to the Circular Letter.

To the circular letter a system of classification has been added as a guide to the order in which medical practitioners should be called upon to serve. The system runs as follows, and attention is drawn to the remarks printed below it:—

1. All newly qualified men who are physically fit.
2. *Junior* medical officers employed by public authorities, such as assistant school medical officers, assistant medical officers of health, assistant asylum medical officers, assistant tuberculosis officers, &c.
3. Junior resident medical officers at institutions.
4. Assistants to private practitioners and partners where no other partner has gone.

Nos. 1 to 4 include married men and single men.

5. Men in single-handed urban or semi-urban practices. For exceptions see Class 6.
6. Men in urban or semi-urban areas who have assumed sole responsibility for some man who is already serving. Wherever possible such a man should be replaced by one who is ineligible for military service on age or other grounds.

Nos. 5 and 6 refer to single men only.

7. Married men in single-handed urban or semi-urban practices.
8. Single men in rural areas where there are no other practices.
9. Married men in rural areas where there are no other practices.

The above scheme of classification has been drawn up as an indication of the views of the Central Medical War Committee as to the order in which, generally speaking, the individual practitioners in any area may advisedly be urged by the local War Committees to leave their practices for the purpose of undertaking military service. The general principle underlying the classification is that the necessary withdrawals of medical men for military purposes should take place in such a manner as to cause as little disturbance as possible of the medical service essential to the needs of the area.

The scheme is not to be taken as a time table, indicating that the whole of any one group throughout the country will be called up before later groups are drawn upon. It is held to be the duty of each area to spare all the men it can without too serious a disturbance of the needs of the community in any locality. But where any question arises between two or more men as to which should accept service first, the difficulty can be settled by reference to the classification. A medical man engaged in service for the efficiency of which any Central Government Department has any responsibility cannot be called up for military service if the consent of the Department is withheld.

The Question of Consultants and Specialists.

The Central Medical War Committee considers that the local Medical War Committees and the hospitals to which the consultants and specialists are attached should decide whether any given consultant of military age can be spared to take a commission, but the Committee submits the following as a guide to the order in which they should be selected:—

1. Anæsthetists, radiographers, and dermatologists.
2. Dentists with medical qualification.
3. Gynæcologists.
4. Alienists.
5. Aurists, ophthalmologists, and laryngologists.
6. Physicians.
7. Surgeons
8. Clinical pathologists attached to recognised institutions.

Consultants and specialists are required to offer for general service and not for special work only, and the order given above is intended to suggest the extent to which any particular branch of consultant or specialist practice can best be spared. Medical men under 45 years of age are not now eligible for commissions unless physically fit for service at home and abroad.

The communication of the honorary secretaries of the Central Medical War Committee ends with a particular request that there should be no slackening in the attempt to get those men who can do so to go as soon as possible. The classification and enrolment scheme is devised for future calls and must not be used to stop the flow of medical officers who are required now.

The Committee has a responsibility for recruiting medical men of military age similar in every way to that placed upon Recruiting Committees in respect of the rest of the population.

SUNDAY REST FOR MUNITION WORKERS.

The committee[1] appointed by the Minister of Munitions to advise on questions affecting the health of munition workers have found a matter of sufficient urgency and importance to justify the issue of an interim report. It was perhaps inevitable that employers should have started off by sprinting as if for a short race, and equally inevitable that experience would soon show once more that intervals of rest are needed to overcome mental as well as physical fatigue. It is the monotony of the work which kills. Although attendance on Sunday has been generally good, employers are now nearly unanimous that Sunday work should be abolished or reduced to a minimum. In some cases this has already been done, but in a number of factories the hours on Sunday are even longer than on other days, especially where the transfer from a 12-hour day shift to a 12-hour night shift is made by working for a continuous period of 18 hours at the change. About 80 orders have been issued by the Home Secretary permitting Sunday labour by women and young persons under 18 years of age. It is, however, becoming increasingly realised that there are limits to hours of labour beyond which no commensurate output is obtained, and an example is given of a firm which in reducing the scheduled average weekly hours from 78½ to 65½ found an increase in the number of actual hours worked with an improved output per hour. From the side of the employee it is stated that many men continue at work who in ordinary times would be absent on account of ill-health, and that there is some reason to think that Sunday labour is losing its initial popularity. The committee recommend the stoppage of all Sunday work except to deal with sudden emergencies, repairs of machinery, tending of furnaces, and so forth, and where complete stoppage is for the moment deemed impracticable, they lay lay down the principle that Sunday labour is a serious evil which should be steadily and systematically discouraged. They add that this applies with special force to the foremen and the higher management in whom obvious signs of overwork have been noted. We are glad that the committee, under Sir George Newman's chairmanship, have come to a decision with such commendable promptitude. The study of industrial fatigue is rapidly becoming an exact science and this decision is one of its first-fruits.

STARVING BELGIUM.

The National Committee for Relief in Belgium[2] during the six months of its existence has been instrumental in raising £1,185,000 throughout the British Empire, of which £1,100,000 have already been spent in food. This has all been bought and distributed by the Hoover Neutral Commission which has received guarantees from the German military authorities not to requisition any food supplies shipped into Belgium for the use of the civil population. It is necessary for the British contributions to be not in kind but in coin, and the money is coming in from all parts of the British Empire—for example, New South Wales is contributing £30,000 a month. The American

[1] The personnel of this committee appeared in THE LANCET of Sept. 25th, p. 730.

[2] An account of the work is contained in an illustrated brochure of 30 pages, How Belgium is Fed. Extracts from a remarkable article in "The Northwestern Miller," by William C. Edgar, with a Foreword by Percy Alden, M.P. Published by The National Committee for Relief in Belgium, Trafalgar Buildings, Trafalgar-square, London.

relief work runs parallel to the National, and America is at present undertaking to find a million pounds' worth of cloth to make warm clothes for the winter. The National Committee does not count on dramatic methods for raising funds but on steady monthly contributions from county and rural committees, and especially on the working man's pennies which have actually amounted to a respectable proportion of the total. The need increases as time goes on; instead of 1½ million names on the books, as in last May, there are now 2¾ millions. The increase is due, in part at least, to a reason which will appeal to the whole British Empire, that the Belgian prefers to starve than to work in German munition factories.

VACANCIES FOR MEDICAL OFFICERS.—There are three vacancies for medical officers in the 3/1st North Midland Field Ambulance, R.A.M.C. (T.). Candidates must be physically fit for service overseas. Application should be made to the Officer Commanding, Belton Park Camp, Grantham.

EDINBURGH MEDICAL STUDENTS AND THE WAR.—The Senatus of the University of Edinburgh have issued two important appeals to University students with reference to Lord Derby's scheme. In the first the Senatus urge all students, other than medical students and members of the senior contingent of the Officers Training Corps, enrolled prior to Oct. 29th, 1915, to join His Majesty's Forces by attesting themselves at once. A separate appeal is issued to medical students under the scheme. Students of the first and second year in medicine are strongly recommended by the Senatus to enlist under the group system. Students of the third year who are entitled to sit for the third professional examination in March and duly enter for the same, should not offer themselves for attestation until after its conclusion. If successful in the whole or part of the examination, they will be included in the class of fourth-year students under Lord Derby's scheme, and will not be required to attest; if unsuccessful they are urged then to join His Majesty's Forces. Meanwhile the Senatus recommend that all third-year students should at once join the Officers Training Corps. All fourth- and fifth-year students are strongly recommended by the Senatus to join the medical unit of the Officers Training Corps.

ABERDEEN MEDICAL STUDENTS.—A circular has been issued to the students of medicine at the University of Aberdeen, signed by the Principal and the Dean of the Faculty of Medicine, reviewing the position of the student as regards enlistment. After handing on the information, which has already appeared in our columns, to the students "in the knowledge that they are already loyally and carefully considering their duty in the light both of the new general call of the recruiting authority for more men for His Majesty's forces under the present national exigencies, and of the opinion of that authority with regard to medical students of the first three years, sanctioned as it is by the Director-General of the Army Medical Council," the circular states that a letter has been received from the Director-General "urging all senior students, who have not already done so, to become cadets in the medical units of their University Officers Training Corps," and concludes with the remark that "this urgency, of course, extends to those medical students of the first three years who, for reasons of age or otherwise, are ineligible for service in the active forces."

A WELSH OVERSEAS HOSPITAL.—The Director-General of the Army Medical Service has offered to send overseas a Welsh hospital of 1040 beds, with a staff of a little over 300, drawn, as far as possible, from the personnel of the Welsh Hospital at Netley, which is still to be continued. Lieutenant-Colonel A. W. Sheen, R.A.M.C.(T.), has been appointed commanding officer, and the four medical officers at present at Netley are to accompany him. These four posts are therefore vacant and will be filled by men over 45 or unfit for overseas service. One of them should be a pathologist. Application for posts should be made to the honorary secretary, Welsh Hospitals Committee, 47, Principality Buildings, Cardiff.

SEGREGATION OF THE CANADIAN WOUNDED.—Canada's generosity towards the sick and wounded in the present war is a matter of common knowledge. We need only recall the Canadian Women's Hospital at Haslar, built, equipped, and maintained by them for the officers and men of the Royal Navy; the hospital ship *Prince George*; and the eight Canadian hospitals in Great Britain contributed by the Universities of Toronto, Laval, and McGill, and by various governments of provinces. Some little time ago a Hospital Commission was appointed by the Canadian Government to incur all necessary expenses for the care of their own sick and wounded. A strong feeling has now arisen in this country, evidenced by the letters of Lady Drummond and Lieutenant-Colonel Henry Page Croft in the *Times* of Nov. 25th and 26th, that the sick and wounded of Canada—and, indeed, of each Dominion—should be segregated only so far as is required by economy of medical service and to avoid the isolation of the individual. The natural desire is that the wounded Canadians may be scattered amongst our people all over the British Isles, so that the women of this country may not be debarred from personal service to them, and as a practical token of the fact that "there is no longer any reserve in the common citizenship of the people of the whole Empire."

HOSPITALS IN SERBIA.—Reports continue to come in from various quarters of the escape from Serbia by different routes of the hospital staffs. Reuter is informed that 37 members of the Scottish Women's Hospital safely reached Podgoritza in Montenegro. The Wounded Allies' Relief Committee were informed by the Foreign Office that Dr. Lillias Hamilton with four nurses started for Monastir on Nov. 17th; they succeeded in reaching Salonica after an arduous and dangerous journey. The matron and a sister of the British Red Cross unit, which had been attached to the Serbian army defending Pirot, also reached Salonica in safety after losing their tents, instruments, and cars, which had to be abandoned near Prizrend. Part of the Berry unit has succeeded in reaching Brindisi after traversing Montenegro, being 16 days without sleeping in a bed. At Kragujevatz Dutch Red Cross sisters report having taken charge of the hospital under the Netherlands flag after the English sisters withdrew; they subsequently left for Holland, as the occupying staff informed them that their presence was not required.

WAR SERVICE BADGES.—Mr. Tennant states that the desirability of issuing armlets to men of military age who have done their utmost to join the army but have been rejected as physically unfit is now engaging attention. Dental surgeons on shore, Mr. Macnamara informed the House, have been granted the Admiralty war service badge, and will in due course be given a special certificate stating that their services cannot be spared and that it is their duty to remain at their present posts. Colonel Sir Edward Ward, Director-General of Voluntary Organisations, has published a letter stating that, subject to the conditions laid down by himself, every worker who does three months' work under the Red Cross will receive the voluntary workers' badge.

EDINBURGH RED CROSS ARCADE SALES.—Mrs. Lennox Beattie and the Edinburgh ladies assisting at the Red Cross sales in the Edinburgh Arcade have distributed the sum of £70 10*s.* 8*d.*, their profits for November, between the Edinburgh Red Cross Fund and Headquarters Fund, Glasgow. The work in the Arcade Café has now been carried on for a year, and the sales of flowers and sweets for rather longer, and altogether the profits have amounted to £1000, which sum has been duly distributed, including a donation of £40 as first instalment for a second motor ambulance.

Dr. F. M. Sandwith, Gresham professor of physic and lecturer at the London School of Tropical Medicine, has been appointed consulting physician with His Majesty's troops in the Mediterranean, and is leaving shortly for Egypt. Dr. Sandwith for many years held the appointment of professor of medicine at the Egyptian Government Medical School, and his contribution to the study of the medical diseases of Egypt is well known.

THE Royal College of Physicians of London has voted the sum of 50 guineas to the war funds of the Order of St. John and the Red Cross Society's Conjoint Committee

OBITUARY OF THE WAR.

ROBERT MONTGOMERY, M.B., CH.B. EDIN.,

CAPTAIN, ROYAL ARMY MEDICAL CORPS.

Captain R. Montgomery, who was killed in France on Sept. 26th, at the age of 25, was the only son of Mr. Robert Montgomery, of Broxburn, West Lothian. Educated at Campbeltown Grammar School, he studied medicine at Edinburgh University, where he graduated M.B., Ch.B. in 1913.

Immediately on qualifying he joined the Royal Army Medical Corps, and trained at Aldershot and Edinburgh Castle, then becoming assistant to Dr. H. L. Calder, of Leith. Soon after the outbreak of war he was sent to Boulogne, attached to No. 3 Field Ambulance, and about six months ago was transferred to the 1st Gloucestershire Regiment with the rank of Captain. He was instantaneously killed in a shallow trench in the act of rising after attending to a wounded soldier. His former chief writes of Captain Montgomery that "he was one of those unassuming personalities who did his work well and never made a fuss over it. He possessed every attribute which goes to make the successful practitioner, and if he had lived would have been an ornament to his profession." His brother officers speak of him to us as entirely fearless and devoted to duty.

THOMAS HAYHURST, M.B., CH.B. EDIN.,

LIEUTENANT, ROYAL ARMY MEDICAL CORPS.

Lieutenant T. Hayhurst, who was on board the *Royal Edward* when she was sunk in the Mediterranean on August 14th, was 27 years of age and the only son of Mr. J. Hayhurst of Preston.

His medical studies were performed at Edinburgh University, where he qualified M.B., Ch.B. in 1911. He was then in succession junior and senior house surgeon and house physician to the Victoria Hospital, Burnley. At the outbreak of the war he was resident at the Manchester Children's Hospital, Pendlebury. This appointment he resigned on receiving a commission in the Royal Army Medical Corps. He was attached to the 1st East Lancashire Field Ambulance (T.F.). Lieutenant Hayhurst was only recently married.

JOHN HARRY MEERS, M.R.C.S., L.R.C.P. LOND.,

CAPTAIN, ROYAL ARMY MEDICAL CORPS.

Captain J. H. Meers, who was killed in action in France on Oct. 10th, at the age of 30, was the elder son of Mr. and Mrs. J. B. Meers, of 41, Lancaster-gate, W. He was educated at King's School, Canterbury, qualified in 1910, and was for a time house physician at St. Mary's Hospital, going afterwards to Islington Infirmary. In 1912 he took a practice in Wandsworth Bridge-road, in which he was most popular and successful. On the outbreak of war he joined the Royal Army Medical Corps as a temporary lieutenant, and on August 23rd was sent to France, attached to No. 11 General Hospital. Returning after sick leave at Christmas he was appointed medical officer to the 10th Veterinary Hospital, and later assistant sanitary officer at Boulogne. He was promoted captain at the end of a year's service, having sold his practice and signed on for the duration of the war. In October, 1915, he was attached as medical officer to the 1st Loyal North Lancashire Regiment, replacing Captain E. G. Nangle, who had been killed on Sept. 26th. A fortnight later, while assisting a wounded private who was lying in great pain exposed to the fire of the enemy, he was himself hit in the arm by a bullet. After lying where he fell for some time before he could be brought in, it was at the moment his comrades had got him to the edge of their trench that he was killed by an explosion of shrapnel. Captain Meers was an energetic Rugby player, always most cheery when playing a losing game. Among his brother officers he was immensely popular. In private life and in his practice he was a staunch and loyal friend to any in distress, and his unostentatious acts of kindness and self-sacrifice were many. It was characteristic of him that, on his last leave, he vigorously denounced as a waste of most precious material such acts as the one which cost him his life. In 1914 he married Cecile Gladys, daughter of Hugh Webb, M.R.C.S., L.R.C.P., of Parsons Green.

PATRICK JOSEPH WALSH, M.B., B.CH., B.A.O. N.U.I.

LIEUTENANT, INDIAN MEDICAL SERVICE.

Lieutenant P. J. Walsh, who was killed in action in France on Sept. 21st, at the age of 26, was the eldest son of Mr. P. J. Walsh, of Midleton, co. Cork. He was educated at Blackrock College, Dublin, gaining a mathematical scholarship. During his medical studies he took numerous honours in examinations at the Royal and National Universities, as well as exhibitions, the Blaney Scholarship amongst them. In October, 1912, he completed his medical degrees and entered the Indian Medical Service with the fourth place three months later. He had acquired proficiency in two native languages before accompanying the Indian Expeditionary Force to France in September, 1914. He was thus 12 months with his regiment in France, with two short periods of leave. His academic facility was combined with a brave and gentle disposition, and a joy of life which made his companionship sought after and endeared him to a wide circle.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

British Casualties.

Mr. ASQUITH states that the British casualties in the war up to Nov. 9th are as follows:—

	Killed and died.	Wounded.	Missing.
France.			
Officers	4,620	9,754	1,583
Other ranks ...	69,272	240,283	54,446
Mediterranean.			
Officers	1,504	2,860	356
Other ranks ...	21,531	70,148	10,211
Other Theatres.			
Officers	227	337	76
Other ranks ...	2,052	5,587	3,223
Navy and Marines in All Fields.			
Officers	589	161	52
Other ranks ...	9,928	1,120	310

The totals are thus: France, 379,958; Mediterranean, 106,610; other theatres, 11,502; and Navy and Marines in all fields, 12,160. This brings all the British casualties to Nov. 9th up to 510,230.

HOUSE OF LORDS.

WEDNESDAY, DEC. 8TH.

Midwives (Scotland) Bill.

The Marquis of CREWE, in moving the second reading of the Midwives (Scotland) Bill, stated that the measure was greatly required in Scotland at present.

Lord BALFOUR OF BURLEIGH remarked that the Bill had the support of all the medical officers in maternity hospitals in Scotland.

The Bill was read a second time.

HOUSE OF COMMONS.

WEDNESDAY, DEC. 1ST.

Certification in Ireland under the Insurance Act.

Sir JOHN LONSDALE asked the representative of the National Health Insurance Commissioners to state the present position of affairs in regard to the new scheme of certification under the National Insurance Act in Ireland; whether the proposal to appoint part-time referees had been suspended until after the termination of the war; and whether care would be taken to ensure that all appointments under the scheme would be decided solely on grounds of merit and experience.—Mr. C. ROBERTS replied: The answer to the second part of the question is in the affirmative. I will send the honourable Member a copy of the memorandum on the subject issued by the Irish Insurance Commissioners. I understand that a conference to consider the position in the light of the revised proposals was held yesterday. I need not say that I am entirely in agreement with the principle enunciated in the last part of the question.

Sir John LONSDALE: Will the honourable gentleman see that the draft proposals in the latter part of the scheme are acceded to?—Mr. ROBERTS: I will do my best.

Mr. HORNER: When are the Government going to appoint the referees?—Mr. ROBERTS: They are not going to be appointed at the present moment, not until the end of the war.

Scottish Panel Chemists.

Mr. C. ROBERTS (the representative of the National Insurance Commissioners), in replying to various points raised by Mr. CURRIE, said that the question of the Scottish panel chemists had not been raised by him, but had been forced on his predecessor by the chemists themselves. The Pharmaceutical Society of Great Britain claimed both in England and Scotland that there were grievances connected with the chemists which required attention and alteration. They asked for and obtained a Departmental Committee on which the Scottish chemists were represented. That committee condemned the present system as between man and man and chemist and chemist. At the same time the removal of certain chemists' grievances in both England and Scotland was suggested. The Pharmaceutical Society of Great Britain wrote to him, and said that they were unable to continue their services at all unless he dealt with the grievances which had been pointed out by this Departmental Committee. Although it was war time, under the circumstances he felt that he had to do it. He thought at all events in England and Wales a settlement had been arrived at. He denied that he had dealt with the Scottish chemists in the spirit of an autocrat. He had proposed to the Scottish chemists terms better than English chemists were willing to accept. It was a little difficult, he confessed, to justify paying Scottish chemists higher than English chemists. If, however, Scottish chemists could make out a case, not by vague statements, but by ascertained facts and figures, that Scottish conditions justified higher remuneration he was quite willing to consider it, and he had said that during the period of inquiry the existing tariff should remain in force in Scotland, and at the end of six months he should then propose a tariff which the Scottish chemists could accept or not. The suggestion about autocracy was beside the mark.

The Scottish Commission.

A question of a controversial nature had been raised—the abolition of the Scottish Commission. It had been suggested that the Retrenchment Committee had proposed to abolish it. The Retrenchment Committee had not come to any decision on that point, but it was supposed that it was under consideration. At once the whole of Scotland was mobilised, and the Scottish Members knew the condition of their post-bags on the subject.

Suggested Inquiry into the Insurance Act.

An inquiry into the working of the Insurance Act had been suggested as opportune at the present time. One thing was plain, that both the staffs of the Approved Societies and of the National Insurance Commission were greatly depleted by enlistments at the present time. The financial position of the country also was abnormal at the present time owing to the war. Although he did not object to an inquiry at the right time, it seemed to him that the present was about the most inappropriate for an inquiry that could be chosen.

Sanatorium Benefit.

The honourable Member had mentioned what he called the paralysis of sanatorium benefit and the improper payment to medical men. He (Mr. Roberts) would not now have time to go into such questions as whether £76 was properly paid to a certain civilian doctor in Scotland. That particular payment to which the honourable Member took exception was due to a methed of calculation of the remuneration of doctors which was not enforced in Scotland at the present time. The Scottish Commission had now adopted a different plan which would prevent the recurrence of that particular case. This was a question of method. He did not think the honourable Member should overlook the fact that when the bargain was made with the doctors the latter took a certain risk and they took over a certain liability to treat all persons, whether they had chosen a doctor or not, at a certain rate. There was no right now to say that the bargain should be cancelled until the period for which the bargain was made had expired. That period was for three years, but it was impossible to deal with the whole question of remuneration of the doctors at this time, when many of them had gone to the front and their practices were being carried on under conditions of great difficultv. The honourable Member had spoken as if sanatorium benefit had almost entirely broken down and as if there were no funds, but nothing of the kind had happened.

Mr. BOOTH: Partial paralysis.

Mr. ROBERTS said that some of the cases might be somewhat difficult, but the position in London had been greatly exaggerated. The funds would be diminished, it might be, by enlistments in the course of the coming year, but still there were large funds amounting to £800,000 or something like that for the country as a whole. There still remained on balance the sum of £150,000 resulting from the accumulated surpluses of pre-war times. He admitted that there might be some parts of the country which were locally in some difficulties.

Mr. CURRIE remarked that funds in the bank were not sanatorium treatment. Where were the sanatoria?

Mr. ROBERTS said that if he had the time to give the details of some particular county or city which had taken the right steps and had got the proper dispensary system and a proper agreement with the county council for the right treatment of the population, insured and uninsured, he could show the honourable Member that, although there still remained something to be done, progress had been very great and could still go on. He admitied that at the present time more money could easily be spent in the fight against tuberculosis, but Insurance Committees, whether in London or elsewhere, must use the considerable sums at their disposal and learn, as other people had to do, to live within their income. If they would do so, although the whole problem might not be solved, a vast amount of real and effective good could be done. The tuberculosis rate was coming down, and he trusted that it would continue to come down under the existing finance of the Act.

Finance of the Act.

The honourable Member (Mr. ROBERTS) went on to deprecate the apprehension that the finance of the Act was getting worse. The sickness benefit claims were falling, not

merely in regard to men, but also in regard to women. In comparing certain weeks since August last with the corresponding period of last year in the experience of one large society the reduction was 20 per cent. in some parts of the country. It was much heavier in London, where the sickness benefit had fallen by 33 per cent. in the case of men and 25 per cent. in the case of women. At the present moment £29,500,000 had been put away and invested in Government securities, and during the period of the war he found between £8,000,000 and £9,000,000 had been invested as a result of accumulation under the Act in Government securities almost entirely and a very large proportion had gone into the war loan.

THURSDAY, DEC. 2ND.

Scottish Panel Chemists and the Drug Tariff.

Mr. CURRIE asked the Representative of the National Health Insurance Commissioners whether his attention had been drawn to the allegation published by the Pharmaceutical Standing Committee for Scotland that the recent official statement issued to panel chemists in Scotland by the Joint Committee was disingenuous and baseless; how many local committees of panel chemists were there in Scotland; how many of them had agreed to the new tariff; and how was it proposed to maintain the supply of drugs in areas where panel chemists declined to do business on the reduced suggested terms.—Mr. C. ROBERTS answered: My attention has been drawn to the allegation mentioned in the first part of the question, which has, I hope, been disposed of to the honourable Member's satisfaction by my reply to his question on this subject on Nov. 28th, my statement in the House last night, and the letter addressed to each chemist on the panel in Scotland, of which I have sent him a copy. There are 56 Insurance Committees areas in Scotland, but the decision as to the continuance of service for 1916 rests with each individual chemist, and full and precise information as to their intentions is not available. The existing arrangements remain in force in any event until the 31st of this month, and I am not without hope that it may yet prove possible to avoid the necessity of terminating those arrangements pending the suggested inquiry into the chemists' further claims. In the meantime the necessity of maintaining the supply of drugs in any eventuality is not lost sight of.

Medical Supervision at Woolwich Arsenal.

Mr. W. THORNE asked the Minister of Munitions whether he was aware that workmen employed in the use of picric and nitric acids at Woolwich Arsenal were being physically affected; and whether he would arrange for any workpeople found to be so suffering to be supplied with antidotes to prevent disease.—Mr. LLOYD GEORGE wrote in reply: I am informed that as regards picric acid no ill-effects are caused, except a discolouration of the skin, but that workmen engaged on trinitrotoluene are sometimes injuriously affected, the degree of susceptibility varying greatly, many workers being immune. Various expedients of a sanitary and medical character are in operation to counteract the difficulty, and a weekly medical examination of all workers is carried out with a view to the transfer to other work of persons specially susceptible.

Treatment of Tuberculous Soldiers.

Mr. R. MCNEILL asked the Representative of the National Insurance Commissioners whether the arrangements made with the Insurance Commissioners for the sanatorium treatment of soldiers discharged from the army suffering from tuberculosis were proving inadequate and unsatisfactory in practice, inasmuch as accommodation in a sanatorium was only available for comparatively few of such patients on discharge from hospital, those few being as a rule the least serious cases; and whether he would take immediate steps to provide sanatorium treatment for all soldiers and ex-soldiers invalided from active service with tuberculous disease, in the interest alike of the men and their families and of the health of the nation.—Mr. ROBERTS answered: I am not aware of any cases referred to the Commissioners by the military authorities under the special arrangements, for which residential accommodation has not been secured without delay. I have already intimated to the honourable Member that I shall be glad to inquire into any particular case which he has in mind.

Mr. MCNEILL asked the Financial Secretary to the War Office whether it was the practice under War Office regulations to discharge immediately from the army men who were pronounced to be suffering from tuberculous disease; whether he was aware that in some cases the discharge from the army took effect when the men were in a dying condition, occasioning distress to the men and their families, and that the War Office refused even to provide burial in such cases; whether he was aware that, in consequence of men being discharged as soon as they were pronounced to be suffering from tuberculous disease and being then obliged to give up their uniforms, the governors of the Brompton Hospital had had to appeal to the public for gifts of warm clothing for military patients; and whether he would institute more generous treatment for men who had contracted tuberculosis in the service of their country.—Mr. FORSTER answered: No soldier suffering from tuberculosis is, under the regulations, discharged from a military hospital unless he is fit to travel and in a fit condition for sanatorium treatment. When so discharged they are civilians, and, as was explained in answer to my honourable friend on Nov. 24th, arrangements for their care are made by the National Insurance Health Commissioners. In the great majority of cases it is not a fact that the disease was due to military service. On discharge a man gives up his uniform and receives a suit of civilian clothes or an allowance in cash.

Mr. BOOTH: Is the honourable gentleman aware that men of the kind indicated are coming upon the funds of Approved Societies all over the country in increasing numbers?—Mr. FORSTER: I was not aware of that.

Poor-law Institutions as Military Hospitals.

Mr. FORSTER, replying to Mr. W. THORNE, said: A certain number of Poor-law institutions have been taken over by the War Office and converted into military hospitals, but the soldiers treated in them are in the same position as the patients in any other military hospital.

Steel Helmets for the Troops.

Mr. RENDALL asked the Under Secretary for War whether surgeons had been consulted as to the best shape of steel helmets for the troops to protect the skull from fracture, scientific authorities as to the form of helmet most likely to receive bullets at an angle favourable to the wearer, and as to the best kind of steel for the purpose.—Mr. TENNANT answered: There has been no slavish adherence to any existing pattern of helmet, but the authorities—surgical and other—have been consulted on the various points mentioned by my honourable friend.

TUESDAY, DEC. 7TH.

Posting Pathological Specimens.

Replying to the Earl of RONALDSHAY, Mr. PIKE PEASE (Assistant Postmaster General) wrote: There is no post other than the letter post by which pathological specimens can be carried. They cannot be included in either the book post or the sample post, and if sent as parcels the risk of breakage and consequent damage to other mails would be too great. A pathological specimen, like anything else sent in a letter, is liable to the new scale of postal charges introduced on Nov. 1st last.

Sickness Experience of Approved Societies.

Mr. BOOTH asked the representative of the National Health Insurance Commissioners to give the basis of his statement on the current sickness experience of the Approved Societies; whether he was aware that many large societies kept careful records which were analysed by actuaries; and would he make himself acquainted with the tabulated results before giving assurances to the House.—Mr. C. ROBERTS said in reply: I explained the basis of the statements referred to in the course of the debate on Wednesday last. My department is in close touch with Approved Societies of all types and is much indebted to them for the readiness with which they have furnished particulars of their sickness benefit experience.

WEDNESDAY, DEC. 8TH.

The Supply of Medical Students.

Mr. SNOWDEN asked the Under Secretary for War whether he had seen the memorial from a number of university representatives and medical men pointing out that the fewness of the number of medical students was a very serious matter, and that it would be a national catastrophe if all the medical students were called up; had this expression of opinion made any impression on the War Office; and would they reconsider their attitude in regard to the enlistment of medical students and revert to the position they took up in June last.—Mr. TENNANT replied: I have seen various statements in the press, but so far as I can find no memorial on this matter has been officially sent to the War Office. It is not proposed to alter the policy which has been announced in this matter.

A CONVERTIBLE MOTOR LORRY AMBULANCE.—Dr. J. H. ten Bokkel Huinink, of Lochem Holland, has designed a motor lorry which can be rapidly converted into an ambulance. After bringing up stores or ammunition to the lines, a few minutes suffice to fetch out framework and sailcloth from underneath the platform of the lorry and build them up to form an ambulance to receive seven stretchers. In a trial exhibition all this was done in eight minutes. It is obvious that a vehicle capable of employment both in afferent and efferent circulation, might fill a useful place in emergency.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BUSTEED, J. H., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Bungay District of the counties of Norfolk and Suffolk.

STEPHENSON, EDWARD FRANCIS, F.R.C.S. Irel., D.P.H., has been appointed Medical Inspector to the Local Government Board, Ireland, for the North-East District.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).
When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

BIRKENHEAD, BOROUGH HOSPITAL.—Junior House Surgeon. Salary £180 per annum, with board and laundry.

BOLTON INFIRMARY AND DISPENSARY.—Third House Surgeon. Salary £180 per annum, with apartments, board, and attendance.

BRISTOL ROYAL INFIRMARY.—House Physicians and House Surgeons. Salary at rate of £120 per annum, with board, apartments, and laundry.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Second House Surgeon. Salary £150 per annum, with board, apartments, and laundry.

DERBYSHIRE HOSPITAL FOR SICK CHILDREN.—Female Resident Medical Officer for six months. Salary £200 per annum.

DUDLEY GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £120 per annum, with residence, board, and washing.

ESSEX, ADMINISTRATIVE COUNTY OF.—Tuberculosis Officer. Salary £500 per annum.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—House Surgeon for six months. Salary at rate of £110 per annum, with board, residence, and laundry.

HORNCASTLE UNION.—Medical Officer and Public Vaccinator. Salary £50 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—Two House Surgeons for six months. Salary at rate of £60 per annum, with washing allowance, board and residence.

LEEDS PUBLIC DISPENSARY.—Female Resident Medical Officer. Salary £130 per annum, with board, residence, and laundry.

LONDON LOCK HOSPITALS, Harrow-road and Dean-street, W.—Anæsthetist one morning per week at each Hospital. Salary £15 15s.

LINCOLN GENERAL DISPENSARY.—Resident Medical Officer, unmarried. Salary £30 per annum, with apartments, housekeeper, fire, and lighting.

MANCHESTER, ANCOATS HOSPITAL.—House Surgeon. Salary £100 per annum, £10 per month war bonus, with board, lodging, and washing. Also House Physician. Salary £80 per annum, £10 per month war bonus, with board, lodging, and washing. Also Two Unqualified Residents. Salary £20 per annum, with board, lodging, and washing.

MELBOURNE, VICTORIA, AUSTRALIA.—Officer in Control of Institution for Preparation of Vaccines and Antitoxins. Salary £650 per annum.

PUTNEY HOSPITAL, Putney Common, S.W.—Resident Medical Officer. Salary £150 per annum, with residence, board, and laundry.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary £100 per annum, with board, residence, and washing.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Election to Court of Examiners.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Female Medical and Surgical Registrar.

ST. MARK'S HOSPITAL FOR CANCER, FISTULA, AND OTHER DISEASES OF THE RECTUM, City-road, E.C.—House Surgeon. Salary £150 per annum, with board, lodging, and washing.

ST. MARY'S HOSPITAL, Paddington, W.—Resident Assistant Anæsthetist for six months. Salary at rate of £100 per annum, with board and residence.

ST. MARY, ISLINGTON INFIRMARY, Highgate Hill, N.—Junior Assistant Medical Officer for six months. Salary at rate of £180 per annum, with board and residence.

ST. PANCRAS INFIRMARY, London.—Senior Assistant Medical Superintendent of the South Infirmary, Pancras-road, N.W., and Senior Assistant Medical Officer of House adjacent. Salary at rate of £225 per annum with board, apartments, and washing.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House Surgeon. Salary £120 per annum, with rooms, board and washing.

THING HERTS. Halton Camp West.—Medical Officers for 3/1st Home Counties Field Ambulance, Royal Army Medical Corps, for Foreign Service.

VENTNOR, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST ON THE SEPARATE PRINCIPLE.—Senior Resident Medical Officer. Salary £250 per annum, with board and lodging.

WARE UNION.—Medical Officer and Public Vaccinator. Salary £90 per annum.

WIGAN, ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Female House Surgeon. Salary £150 per annum, with board, apartments, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy for a Certifying Surgeon under the Factory and Workshop Acts at Levenwick, in the county of Shetland.

Births, Marriages, and Deaths.

BIRTHS

BATHURST.—On Dec. 3rd, at Hillcrest, Cardigan-lane, Leeds, the wife of Lieutenant L. Bathurst, M.B., B.S. Lond., R.A.M.C., of a son.

FAWKES.—On Dec. 6th, at Biggar Bank, Walney Island, Lancashire, the wife of Surgeon Marmaduke Fawkes, R.N., of a son.

REID.—On Dec. 1st., at De Vere-gardens, W., the wife of Captain W. Douglas Reid, R.A.M.C., of twin sons (one stillborn).

WILSON.—On Dec. 5th, at College-crescent, Swiss Cottage, N.W., the wife of J. Clark Wilson, M.D. Edin., M.R.C.P. Lond., of a son.

MARRIAGES.

HENRY—TINNEY.—On Dec. 1st, at the Church of St. Thomas of Canterbury, Woodford, Stephen John Henry, M.B. Glasg., Lieutenant, R.A.M.C., to Marguerite Evelyn, second daughter of Mr. J. P. Tinney, of Bellbrook, Woodford, Essex.

MOUAT—BROWNE.—On Nov. 30th, at St. Hilda's, Whitby, Thomas Bernard Mouat, M.D. Edin., F.R.C.S. Eng., Captain, R.A.M.C. (T.), to Ida, eldest daughter of John Browne, of Whitby, Yorks.

NEVE—BROWNE.—On Dec. 1st, at All Saints' Church, Srinagar, Kashmir, Ernest Frederic Neve, M.D., F.R.C.S. Edin., to Jean Sophia, elder daughter of Mr. T. G. C. Browne, of Barnhill, Bromley, Kent.

DEATHS.

EAGER.—On Dec. 1st, Reginald Eager, M.D. Lond., late of Northwoods House, Winterbourne, Bristol.

HANDSON.—On Dec. 6th, at the Briar Patch, Knebworth, Herts, Mary Ann Handson, L.R.C.P. & S. Edin.

LAKE.—On Dec. 8th, Mildred, wife of Richard Lake, of 62, Bickenhall Mansions, and of 6, Cavendish-place.

MACKENZIE.—On Nov. 28th, killed in action in France, Lieutenant Maurice Mackenzie, R.A.M.C.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, AND UNWIN, LIMITED.
Mysteries of Life: A Book for Boys and Girls. By Stanley de Brath, M.Inst.C.E. Price 4s. 6d. net.
The Greek Tradition: Essays in the Reconstruction of Ancient Thought. By J. A. K. Thomson. With Preface by Gilbert Murray. Price 5s. net.

BAILLIÈRE, J. B., ET FILS, Paris.
Les Écoles Professionnelles de Blessés. Par le Dr. M. Carle. Préface de M. Edouard Herriot. Second edition.

BAILLIÈRE, TINDALL, AND COX, London.
Rhizopod Protozoa: the Cause of Cancer and Other Diseases. Part IV. By J. Jackson Clarke, M.B. Lond., F.R.C.S. Price 7s. 6d. net.

BELL, G., AND SONS, London.
Radium, X Rays, and the Living Cell. With Physical Introduction. By Hector A. Colwell, M.B. Lond., D.P.H. Oxford, late Assistant in the Cancer Research Laboratories, Middlesex Hospital, and Sidney Russ, D.Sc. Lond., Physicist to the Middlesex Hospital. Price 12s. 6d. net.

CASSELL AND CO., London, New York, Toronto, and Melbourne.
The Seven Ages of Woman: A Consideration of the Successive Phases of Woman's Life. By Mary Scharlieb, M.D., M.S. Lond. Price 6s. net.

CHURCHILL, J. AND A., London.
Year-book of Pharmacy and Transactions of the British Pharmaceutical Conference, 1915. Edited by J. O. Braithwaite, Thos. Stephenson, F.R.S.E., and Reginald R. Bennett, B.Sc., F.I.C.

CLARENDON PRESS, Oxford.
Science and War: an Address delivered at the University of Leeds Medical School on Oct. 1st. By Sir William Osler, Bart., M.D., F.R.S., Regius Professor of Medicine, Oxford. Price 1s. 6d. net.
The Cures of the Diseased in Forraine Attempts of the English Nation. London, 1598. Reproduced in facsimile, with introduction and notes by Charles Singer. Price 1s. 6d. net.

KIMPTON, HENRY, London.
Fractures and Dislocations: Diagnosis and Treatment. By Miller E. Preston, A.B., M.D., First Lieutenant, M.R.C., U.S.A. With a chapter on Röntgenology. By H. G. Storer, M.D. Price 31s. 6d. net.

KING, P. S., AND SONS
English Public Health Administration. By B. G. Bannington. Introduction by Graham Wallas, M.A. Price 7s. 6d. net.

LAURIE, T. WERNER, London.
British Manual of Physical Training. By C. F. Upton, Lieutenant, R.A.M.C. Price 2s. net.
Jerusalem. By Pierre Loti. Price 7s. 6d. net.
Islington and Finsbury. By W. Vere Mingard. Price 1s.

LONGMANS, GREEN AND CO., London, New York, and India.
The Molecular Volumes of Liquid Chemical Compounds from the Point of View of Kopp. By Gervaise Le Bas, B.Sc. Lond. Price 7s. 6d. net.

MURRAY, JOHN, London.
With the Turkish Army in the Crimea and Asia Minor: a Personal Narrative. By Thomas Buzzard, M.D. Price 10s. 6d. net.

PHILIP, GEORGE, AND SON, London and Liverpool.
Philips' Popular Mannikin. Edited by W. S. Furneaux. Price 3s. 6d. net.

SCIENTIFIC PRESS, LIMITED, London.
How to Become a Nurse. By Sir Henry Burdett, K.C.B., K.C.V.O. New edition. Price 2s. net.
Training in First Aid and Nursing. By Captain Begg, R.A.M.C. Price 1s. 6d. net.

Notes, Short Comments, and Answers to Correspondents.

THE EQUILIBRIUM OF GAS AND AIR IN THE GAS FIRE.

IN a series of articles which we have published on the hygienic aspects of the gas fire used for domestic heating purposes we have shown how important have been the improvements effected in the construction of the "fires" aimed chiefly at preventing the flow of combustion products into the room. There is now no reason for the existence of a gas fire which violates this principle. Next we suggested that the familiar "purr" of gas burning in the atmospheric burner should be overcome and abolished, and finally, that the adjustment of the supply of gas and air should be automatic and not left to the consumer, who, as a rule, knows little about these things. Several more or less successful attempts to attain these ends have since been made, and we have referred to them. More recently a modified burner known as "the economic air and gas regulator" has been brought to our notice. Once this burner has been adjusted by the expert workman it remains "fool proof." In other words, the average domestic servant who is generally responsible for lighting the "fire" and more or less keeping an eye on it has nothing to do but operate one valve which, whether the supply be turned on full or low, secures a flame free from flaw, inasmuch as under extreme conditions one way or the other the proportion of gas to air is always the same. Complete combustion is thus secured and sooting of the "radiants" by reason of the flames being starved of air is avoided. The valve, intended for use by the consumer, by an ingenious mechanical arrangement operates automatically, and at the same time both the supply of gas and air and their proper relation is thus kept up, whether the flames be turned high or low. This also secures a most desirable immunity from the drawback of "back-firing." Another improvement developed by the same company (The Economic Stove Company, of 128, Charing Cross-road, London, W.C.) consists in a simple modification in construction of the mixing chamber by which a more complete admixture of the gas and air is obtained; the nozzles, further, are rectangular instead of circular, an arrangement which brings the edge of the flame into better contact with the tubular "radiants," so securing an increased supply of effective or radiant heat. This means that, whether turned high or low, the flame impinges upon the "radiants." Speaking generally, these devices aim at keeping the gas- and air-supply under automatic control, so that whatever the flow of gas may be the flames are of the same efficient quality. The flames, moreover, are quiet.

WANTED, A HOME.

To the Editor of THE LANCET.

SIR,—I should be grateful to anyone who could supply information as to a suitable home within a moderate distance of Chester for a man aged 58, suffering from paralysis of both legs, who could only afford a small contribution towards the cost of his maintenance.—I am, Sir, yours faithfully,

MEREDITH YOUNG,
County Medical Officer, Cheshire County Council.

Public Health Department, 43, Foregate-street,
Chester, Dec. 3rd, 1915.

THE "WELLCOME" PHOTOGRAPHIC EXPOSURE RECORD AND DIARY, 1916.

THIS annual publication of Messrs. Burroughs, Wellcome, and Co. is an excellent companion for amateur photographers, informing them about, and advising them on, the carrying out of the many little details which go to the production of a successful photograph. The expert photographer will also find much useful information. In addition to the ordinary diary pages, space is provided for recording particulars of exposure. At the end on the back cover is affixed a rotatory device (the "Wellcome" Exposure Calculator) by which can be indicated the correct exposure of any plate at any time of the year. Four beautifully reproduced photographs embellish the diary—namely, the meeting of King George V. with the King of the Belgians in Flanders, a view of Sir Douglas Mawson's Antarctic Expedition, and two views of actual fighting in the Dardanelles. The Diary, which makes a useful Christmas present, is published in three editions, one for the Northern Hemisphere, one for the Southern, and another for the United States. The price in the British Isles is 1*s*.

THE "MULTIMIST" SPRAY.

APART from the small hand bellows, the glass tube which in this instrument effects the spray occupies no more space than a lead pencil. The principle by which spray is produced is well known, but Messrs. C. J. Hewlett and Sons, of 35 to 42, Charlotte-street, London, E.C., have introduced in their "Multimist" spray slight modifications in construction which adapt it for atomising oils, spirituous solutions, or aqueous fluids equally effectively. The spray works quite well when only a few drops of fluid are used. This allows of the employment of a restricted quantity of medicament, as in the case of cocaine. The glass is of the "toughened" variety, just opposite the end of the injector, and on the inner wall of the tube is a kink upon which the current of spray impinges. This serves to break the mechanical vapour into a uniform spray.

M.I.Mech.E. writes to call our attention to a suggestion for treating frost-bite by enclosing the limb in an air-tight chamber, from which the air is then exhausted. This method of producing venous congestion is a well-known modification of Bier's passive hyperæmia, but as applied to any except the very earliest stage of frost-bite would be calculated to increase the venous congestion already present and result in nothing but harm.

Dr. Richenda Gillett (31, Lyndhurst-road, Hampstead, N.W.), who is responsible for obtaining the instruments and drugs necessary for the medical section of the Friends' War Victims' Relief Expedition in France and Serbia, writes to inquire if any reader has instruments to give or lend to this work. A pair of axis-traction forceps (preferably Neville's, Williamson's, or Milne Murray's) is an immediate need.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Tuesday, Dec. 14th.

GENERAL MEETING OF FELLOWS: at 5 P.M.
Ballot for the Election to the Fellowship of Candidates.

PSYCHIATRY (Hon. Secretaries—Bernard Hart, G. F. Barham): at 4.30 P.M.
CLINICAL MEETING at the Bethlem Royal Hospital, S.E.

Wednesday, Dec. 15th.

HISTORY OF MEDICINE (Hon. Secretaries—Leonard G. Guthrie, J. D. Rolleston): at 5 P.M.
Books, MSS., &c, on view at 4.30 P.M.
Dr. Raymond Crawfurd: Of Superstitions concerning Menstruation.
Mr. D'Arcy Power: Edmund Harman, "King's Barber" to Henry VIII.

Thursday, Dec. 16th.

DERMATOLOGY (Hon. Secretaries—A. M. H. Gray, J. E. R. McDonagh): at 5 P.M.
Exhibition of Cases (at 4.30 P.M.).
Dr. George Pernet: Morphœa and Sclerodermia (already shown) with Recent Acute Involvement of the Soles of the Feet.
Dr. J. H. Sequeira: Myxœdema with Sclerodermia.
Dr. Knowsley Sibley: Actinomycosis.
Dr. Graham Little: (1) Granuloma Annulare with Widespread Follicular Eruption; (2) (?) Lichen Planus.

Friday, Dec. 17th.

ELECTRO-THERAPEUTICS (Hon. Secretaries—S. Gilbert Scott, E. P. Cumberbatch): at 8.30 P.M.
At the King George Hospital, Waterloo-road, S.E. (by kind permission of the Commanding Officer).
The X Ray Section will be open for Inspection and a Demonstration of the methods employed will be given by Members of the Staff.

Monday, Dec. 20th.

Lecture:
Lieutenant-Colonel Sir Ronald Ross, K.C.B., F.R.S., will deliver a Lecture on the Treatment of Dysentery in the Robert Barnes Hall at 5 P.M.
The President of the society will preside and a Discussion will follow.

ILLUMINATING ENGINEERING SOCIETY, House of the Royal Society of Arts, 18, John-street, Adelphi, W.C.
TUESDAY.—8 P.M., Discussion on Recent Developments in Electric Incandescent Lamps in Relation to Illuminating Engineering (opened by Professor J. T. Morris).

ROYAL MICROSCOPICAL SOCIETY, 20, Hanover-square, W.

WEDNESDAY.—8 P.M., Demonstration:—Mr. J. E. Barnard: The Use of Ultra-violet Light in Microscopy.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.

FRIDAY.—5.30 P.M., Series of Papers on Tropical Subjects:—Dr. G. C. Low: An Interesting Case of Eosinophilia; Dr. A. F. J. Kerr: Intestinal Parasites in Northern Siam; Dr. W. M. Strong: The Causation of So-called Tropical Anæmia; Dr. J. O. Shircore: A Method for the Trapping of Glossina Morsitans suggested for Trial.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Gray: Operations. Mr. B. Harman: Diseases of the Eye.

TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Addison: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women.

THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Gray: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Addison: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patients (Mr. E. Gillespie). 2.30 P.M., Medical Out-patients (Dr. T. R. Whipham); Gynæcological Out-patients (Dr. Banister). 3 P.M., Medical In patients (Dr. R. M. Leslie).

TUESDAY.—2.30 P.M., Surgical Operations (Mr. Carson). Clinics:—Medical Out patients (Dr. A. G. Auld); Surgical Out patients (Mr. Howell Evans); Nose, Throat, and Ear Out-patients (Mr. C. H. Hayton). Radiography (Dr. Metcalfe). 3.30 P.M., Medical In-patients (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2.30 P.M., Throat Operations (Mr. C. H. Hayton). Children Out-patients (Dr. T. R. Whipham); Eye Out-patients (Mr. R. P. Brooks); Skin Out-patients (Dr. H. W. Barber). 5.30 P.M., Eye Operations (Mr. R. P. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patients (Dr. A. J. Whiting); Surgical Out-patients (Mr Carson); Radiography (Dr. Metcalfe). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

FRIDAY.—2.30 P.M., Surgical Operations (Mr. Howell Evans). Clinics:—Medical Out-patients (Dr. A. G. Auld); Surgical Out-patients (Mr. E. Gillespie); Eye Out-patients (Mr. R. P. Brooks).

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—4 P.M., Dr. C. Kempster: X Rays. Epilation for Ringworm.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: The Early Lesions of Syphilis and their Treatment.

For further particulars of above Lectures, &c., see Advertisement Pages

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(Taken daily at 9.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec 8th, 1915.

Date.		Barometer reduced to Sea Level and 32° F	Direction of Wind.	Rain-fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Dec.	2	29·606	S.W.	...	61	47	43	42	43	Overcast
,,	3	29·580	E.	0·53	50	50	43	45	45	Raining
,,	4	29·430	S.W.	0·27	55	55	45	47	48	Overcast
,,	5	29·510	S.W.	0·20	61	56	43	46	49	Cloudy
,,	6	28·870	S.W.	0·37	79	54	43	51	54	Overcast
,,	7	29·496	S.	0·19	61	53	46	45	46	Fine
,,	8	29·496	S.W.	...	73	51	44	41	44	Fine

The following magazines, journals, &c., have been received:—British Journal of Dental Science, Medical Officer, Revista Médica del Uruguay, British Dental Journal, Asylum News, Journal of Tropical Medicine and Hygiene, Edinburgh Medical Journal, Practitioner, Hospital Assistant (India).

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